The Builder.

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Salisbury, Sarum, and Surroundings.

BEFORE exploring Old Sarum, which is close to the thirteenth-century city of Salisbury, and where, as we have said, the early history of the latter can be best grasped,* those who are visiting the neighbourhood for the first time should go on to that stone puzzle, Stonehenge, and try to satisfy themselves, if they have looked into the arguments on both sides, or rather on all sides, whether it be pre-Roman or post-Roman, — pre-historic or merely non-historic, —whether reared by the mystic Druid when wild in woods the British savage ran long before Cæsar had heard of him, or in that strangely obscure period, the Arthurian Round-Table time, in between the going of the Roman and the coming of the Saxon,—who it is known called the place *Stanhengist*, or the hanging stones. It was evidently an antiquity of unknown origin in the eighth century, and we see stronger reasons for believing that it was set up before the Roman domination than that its erection followed their departure. This marvellous memorial, looking like "the bowels of a mountain turned inside out," as Stukeley graphically describes its present aspect, should be religiously preserved. The plough and rights of property are gradually breaking down the outlying barriers and ancient ways; the cultivator approaches it nearer and nearer; and the time is not far off when it will be incumbent on the country to secure its inviolability by purchase of the site. The fallen stones, too, where the original position is obvious, should be raised and replaced —a good work for a good body, the Wiltshire Archæological Association, to undertake. Once seen, Stonehenge can scarcely be forgotten: the dignity of the great trilithons is something surprising.

Coming back to Old Sarum we find, with much for doubt, a great deal that is certain and unmistakeable. If there be no positive evidence that this remarkable elevation, with its crater-shaped central mount, and early known as *Sorbiodunum*, the dry down, was a British fortification, there seems great reason to believe that it was; and we do know by testimony undeniable that it was occupied by the Romans, who left scattered over the soil in every direction dated metal memorials of their occupation, in the shape of coin from Hadrian upwards. That it was an important Saxon city the evidence is conclusive: we have documents dated about the year 720, conveying lands to the church of St. James, in "Sarisbyrig," and an order by the great Alfred, dated 872, translated thus:—"I, Alfred, king and monarch of the English, have commanded Earl Leofric, of Wiltunshire, not only to preserve the castle of Sarum, but to make another ditch to be defended by palisadoes." Afterwards comes here William the Conqueror, to impose military tenure. In his successor's reign, it is made the seat of the episcopal see in place of Sherborne; and then a cathedral is built, and part of the fortified area is held by the clergy and part by the castellan. This arrangement lasts a century, but with many squabbles, and at last the church throws off the military rule, and the new cathedral, such as we see it, is commenced in the plain below.

The Pope's Bull, A.D. 1218, for the removal of the cathedral, says,—"that forasmuch as your church is built within the compass of the fortifications of Sarum, it is subject to so many inconveniences and oppressions that you cannot reside in the same without great corporeal peril; for being situated on a lofty place, it is, as it were, continually shaken by the collision of the winds; so that while you are celebrating the divine offices, you cannot hear one another, the place itself is so noisy: and besides, the persons resident there suffer such perpetual oppressions, that they are hardly able to keep in repair the roof of the church, which is constantly torn by tempestuous winds: they are also forced to buy water at as great a price as would be sufficient to purchase the common drink of the country: nor is there any access open to the same without the license of the castellan. So that the people were sometimes denied entrance."

It was a "dry down" in more senses than one. The church being gone, Old Sarum dwindled on until Edward III. gave a formal order for its destruction, granting to the dean and chapter all the stone walls of the former church for the improvement of the new cathedral and close.

A walk around the place is full of interest. It is not one of those earthworks that call for faith and imagination: the whole plan is clear. The area within the entrenchments is called about 28 acres; the outer fosse is from 80 ft. to 100 ft. deep; the west and east entrances are strikingly obvious, and near the latter are seen some large masses of concrete, part, probably, of the gateway in the Mediæval outer vallum. Close by, in the plain, lies the New Sarum, with the cathedral uprising in its midst. Were we not right in saying that its early history could be best grasped amidst the neighbouring earthworks?

Of the more ancient church there is still a memorial. In uncovering the foundations of the cathedral in Old Sarum, a large key, doubtless that of the building, was found near the site of the west door, and, with a smaller key, discovered near the site of the high altar, is now to be seen in the Salisbury Museum, and serves to lock together with tangible bonds the old and the new.

This museum contains many things of interest, and has been well looked after by Mr. Nightingale, of Wilton, and Mr. E. T. Stevens. Salisbury has seldom been without a cultured man or two taking interest in its antiquities and history. The late Dr. Fowler, whose portrait hangs over the door in the Museum, and who would have been 100 years old if he had lived two years more (he was born in 1765, and died in 1863) was one of the most valuable of them. That he early took an interest in science is shown by the circumstance that when he died he was Father of the Royal Society.

The value of a local museum of this sort is immense: it serves, amongst other good offices, to prevent the dissipation of matters of interest. Thus a cross of Limoges Champlevée enamel turned up a fortnight ago, has already found its way there, and is safe.

The greater number of the Mediæval objects were found during the excavations that were carried on in Salisbury a few years ago, for drainage purposes, when active friends carefully preserved all the relics that were brought to light. As might be expected, few are earlier than the thirteenth century, at which time, as already said, the inhabitants of Old Sarum began the new city.

Attached to the county collection is a singularly valuable museum, founded by Dr. Blackmore, and which bears his name. At his cost a handsome open-roofed building, in the Mediæval style, designed by Mr. Harding, and decorated by Messrs. Harland & Fisher, was erected at the back of the county museum, and with its contents, munificently made over to the city for ever. The collection illustrates exclusively the pre-, or, at any rate, non-historic times, and is arranged under four heads,—Remains of Animals found associated with the Works of Man; Implements of Stone; Implements of Bronze; and Implements of modern Savages,—which serve to throw light on the use of similar objects belonging to pre-historic times. Recollecting that it was not onger ago than 1840, when the late M. Boucher de Perthès first called attention to the human-worked flints found in the drift of the Somme valley, and that it was in 1857 when Mr. Prestwich and Mr. John Evans verified the discovery on the spot, the enormous collections of such implements made since in all parts of the world are little less than astounding. The various kinds of Celts that have been discovered,—not *Kelts* by the way, the name has nothing to do with races, but comes from *celtis*, a chisel,—may be well studied in the Blackmore Museum, as may be the ancient lake dwellings of Ireland, Switzerland, and America. The modern discoveries on which the fact was established that early inhabitants of Switzerland lived in huts supported on piles above the surface of water must not be dated farther back than 1853. Herodotus describes a Thracian tribe as living in such dwellings in Lake Prasias, now in modern Roumelia; and we have accounts of African and other tribes doing the same thing still. The illustrations of tumuli and mound cities are valuable, and there is a very interesting model of ancient pit dwellings explored at Highfield, near Salisbury, in 1866. These pits are chiefly in groups communicating with each other. They are of beehive form, ranging in diameter at the bottom from 5 ft. 6 in. to 7 ft., though in some few cases they measure 14 ft. They are carried down to a depth of from 7 ft. to 10 ft. in the soil, and a shaft about 3 ft. in diameter seems to have afforded entrance to each group of pits. The men of Salisbury of that period did little more for their personal comfort than rabbits, and something less than beavers. Implements of flint and of bone were found in these pit dwellings, including some horn combs, with the teeth broken off, that closely resemble some in recent use by the Esquimaux for scraping fat from the backs of skins, excepting that the latter were made of wood with the sharp claws of birds lashed to them.

It will afford a contrast if we go from the contemplation of these retreats of our early predecessors to one of the historic homes of the neighbourhood, say Wilton House, "Pembroke's princely dome," filled with works of art and ingenuity—results of the highest intelligence—enjoyments and elevators for all time.

This house is about three miles from Salisbury, and is most liberally opened to the public. Holbein and then Inigo Jones were concerned in its first erection. It is best known by the collection of antique sculpture it contains, commenced in 1678, when the then Earl of Pembroke bought part of the Arundel marbles. It is curious to note how much less pleasure the majority of visitors find in the examination of such works than in viewing a collection of pictures. Many, indeed, who would contemplate with interest the sculpture round the doorway of a Mediæval cathedral, often distorted and ill-drawn, even if vigorous and expressive, look coldly and carelessly on the more perfect pro-

* See p. 437, *ante*.

ductions of classic art, scarcely recollecting, even, the astounding fact that these in many cases unapproachable works were executed two thousand and more years ago. The reason is not difficult to find, but we will not stop just now to look for it. The marbles at Wilton greatly differ in value and interest. The same may be said of the pictures, though the collection as a whole justifies its reputation. The large Vandyck, representing Philip Earl of Pembroke and his family, although greatly injured by time and restorers, is a noble picture worth a journey; to say nothing of the same painter's Charles I., Holbein's Father of Sir Thomas More, and the remarkable little diptych of King Richard II., the second leaf having on it a presentation of the Virgin and Child. Having been painted early in Richard's reign, it has been mentioned as evidence that oil-painting had been practised previously to its supposed discovery by Van Eyck about 1414, but Waagen points out what seems to us correct, that it is in tempera. The execution is singularly delicate. In the grounds, a bridge by Holbein, a view of Salisbury Cathedral, seen between two masses of trees, and recollections of Sir Philip Sidney and his "Arcadia," occupy the thoughts.

Every one knows of the church at Wilton, built at the cost of the late Lord Herbert of Lea, then Mr. Sidney Herbert, and fully described in earlier volumes of this journal.* The design is founded on the churches of Santa Maria and San Pietro, at Toscanella, and the interior glows with marbles, mosaic work, colour, gilding, and stained glass.

There is nothing better, however, in the building let us say, than the two monuments in memory of Lord Herbert and his mother, the Countess of Pembroke, executed by Mr. Birnie Philip, and illustrated in the *Builder* in 1864.

How far the erection of this costly church helped to lead the widow of its illustrious founder to the Church of Rome has yet to be traced.

Going out another three miles on the other side of Salisbury, Longford Castle, much less known than Wilton House, is met with,—a quaint casket with rare contents. The collection of pictures is surpassingly interesting. Waagen, in his book, grumbles greatly about the way in which, having obtained admission with great difficulty, he was hastily driven through the rooms. A different system prevails now; for, though our visit fell on a day when the rooms are not supposed to be open, we were received with the greatest politeness, and allowed to loiter as we would. And a rare treat it is. So far as regards Holbein, it is not too much to say that, to appreciate fully the merits of that great master, Longford Castle must be visited. Here is found the life-like portrait of Erasmus that he brought to England, with a letter from the original, to introduce him to Sir Thomas More. On the frame is this quotation,—"*E tenebris clarum doctrinæ tollere lumen qui felix potuit primus Erasmus erat.*" Holbein's portrait of Eagidius, the traveller, to whom also Erasmus had introduced him, is another fine work; but the grandest of his pictures is a large canvas, showing two male figures, the size of life, richly dressed, with a table, philosophical instruments, and music. The title given to it, the Two Ambassadors, is unsatisfactory. A little study would, probably, bring out something less so. The German words on the music are readable; the dagger of one of the figures and a book are both marked, "*Ætsuæ*, 29." With or without the desired knowledge, however, this is a wonderful work. Claude's well-known "Morning" and "Evening;" Titian's portrait of a sculptor; the Escurial, by Rubens; Carlo Dolce holding his own profile; Teniers, by himself; Guido's head of a Magdalen; a Queen Elizabeth, by Zuchero; and a Spanish admiral, by Velasquez, are other pictures to remember. Nor can we omit to note in the not very attractive chapel, a triptych which, if not by Albert Dürer, as was long thought, is, nevertheless, a remarkable painting. On all sides are noticeable things; amongst them the marvellously worked steel chair, with its hundreds of small figures in relief, which was presented to the Emperor Rudolph II. by the city of Augsburg, and excited astonishment at South Kensington awhile ago. Thomas Ruker, who made it in 1577, has put his name to it. He was one of whom all the Smiths may be proud.

* See also a paper "On Early Christian Buildings and their Decorations; illustrated by Wilton Church." By Geo. Godwin. *Journal of the British Archæological Association*, vol. xv., p. 131.

The castle, so called, is curious in form. Sir Thomas Gorges, married to a Marchioness of Northampton, employed the well-known John Thorpe as his architect, and built it about 1591, in the shape of a triangle with huge circular towers at the angles, and a moat around.* The late Lord Radnor began to turn it into a hexagon, but left it unfinished. The towers give it a character of its own, but the details do not pay for close inspection. Gwilt says a diagram of the Trinity was drawn in the middle of the triangular court: we had no opportunity to see if this still remains. Gossip longer, however, we may not, though these are but a few of the surroundings of Salisbury and Old Sarum.

* Gorges died in 1610, and has a monument in Salisbury Cathedral.

NEW PALACE AT WESTMINSTER.

PROPOSED ADDITIONS AND ALTERATIONS FOR NEW REFRESHMENT ROOMS.

EVER since the year 1863, the necessity of enlarging the dining-rooms of the House of Commons has been recognised, and the architect (Mr. E. M. Barry) has, as our readers are aware from notices in these columns, prepared numerous designs for the purpose. The select committee on this subject, of which Mr. Ayrton was chairman, has just issued a report, recommending the adoption of a plan. This plan is somewhat oddly termed the First Commissioner's plan, but having examined it, we find it, in fact, a part of Mr. Barry's scheme of last year, having been copied from his plans, which have been approved by committees of Lords and Commons. It proposes, 1st., the conversion of the conference-room and adjoining tea-room into new dining-rooms; and, 2ndly, the erection of a new peers' committee-room, in lieu of the conference-room. It appears that Mr. Barry suggested the first arrangement in 1867, when the kitchen committee thus reported on his plan:—"That Mr. Barry has now suggested a new plan for improving the accommodation, viz., by converting the present conference and adjoining committee-rooms into a large dining-room for both Houses of Parliament, in lieu of their present separate dining-rooms, which could be used for tea-rooms, or for other purposes; and they are of opinion that this plan is preferable to any yet produced before your committees, and from inquiries they have made, they have reason to believe that such an arrangement would give general satisfaction." The same committee reported last year, that "they saw with satisfaction that in the new plans lately laid before the House by Mr. Barry, it is proposed to adopt the original proposition of converting the present tea-room and the conference chamber into new dining-rooms."

In order to meet objections raised by the Lords' Committee, Mr. Barry suggested the second arrangement respecting the substitute for the conference-room in 1869, and the Lords' Committee thus reported upon it last session:—"The committee approve of the new conference or committee room proposed in the new plan submitted this day by Mr. Barry." They now further report (p. 8) that they "approved" Mr. Barry's plan of last year, and are willing to "accept" Mr. Ayrton's version of it, if he will alter the entrance in accordance with Mr. Barry's proposal.

We are credibly informed that Mr. Barry's design has not been paid for, as he only asked for a fee of fifty guineas for attendances on the committees' and the preliminary negotiations, expecting, according to custom, his remuneration when the plans were carried out.

Various grave objections to the present plan will occur to our art-readers from an architectural point of view, and there are, in addition, some obvious practical inconveniences in the changes made in Mr. Barry's plan. Thus (1.) the entrance to the new committee-rooms is so contrived that the public must ascend five steps in order immediately to go down five more before entering the room. (2.) The serving-room has no external light or ventilation, and will be very objectionable. (3.) The kitchen is narrow, being 14 ft. 9 in. wide, and only 12 ft. 8 in. high, or a few inches higher than the present kitchen, the lowness of which is inconvenient. (4.) The rooms on the ground-floor under the new committee-room will be much darkened. All these defects are interpolations.

It will be easily seen from the foregoing remarks that the work requires architectural skill; it is no mere matter of routine which can safely be entrusted to a clerk of works, as is shown by the fact of Mr. Ayrton's estimate being no less than 6,600*l.* It embraces new building, as well as alterations, and will affect the architecture and convenience of the palace both externally and internally, and Mr. Gladstone and Mr. Lowe led the House of Commons and the public to believe that an architect would be employed for such works, and that Mr. Barry should be that architect. We have therefore a right to claim the redemption of this pledge.

As much is now said about cheapness, it is right to add that the present plan is a small portion only of Mr. Barry's general design of last year; for in that scheme was included, by order of the Government, a new library, dining-rooms, and committee-rooms for the lords, and also extensive offices for the purpose of joint refreshment-rooms for both Houses of Parliament, in connexion with the plan for a new House, recommended by the Select Committee on House of Commons Arrangements. This part of the scheme is now abandoned. The proposed new peers' committee-room is, however, Mr. Barry's suggestion; and, as Mr. Ayrton has copied his proposal, this part of the estimate of the latter admits of comparison with Mr. Barry's estimate of last year. Mr. Ayrton's estimate, including the entrance, is 2,450*l.*; Mr. Barry's was 3,135*l.*, but Mr. Barry's room was 2 ft. wider, and the floor was raised to get height for the new kitchen beneath, and so avoid the steps down. Mr. Barry's entrances were also larger and more convenient. It is therefore clear, that for the same things Mr. Ayrton's estimate and Mr. Barry's would not greatly differ. Moreover, Mr. Barry stated to the committee, last year, that his was a "covering estimate," and that he fully expected to be able to get the work done for less than was stated therein. On this subject we may quote, with approval, from the present Report, the following extract from the Report of the Lords' Committee (p. 8). Their lordships state, that "they are very sensible of the importance of observing reasonable economy in all public expenditure; but they feel that, in making permanent provision for the accommodation of the Houses of Parliament, it is desirable that all should be done in the best manner."

We say the same. It is not fair to the public to allow a public building of elaborate architecture to be tinkered by those who, by their own confession, are ignorant of architecture and incompetent to deal with it. It is not fair to Mr. Barry to appropriate his ideas, which he has given to the public on the supposition that, if they were adopted, he would be engaged to realise them, and to allow others to carry them out in a mutilated and unsatisfactory manner.

OLD STAINED GLASS IN ENGLISH CHURCHES.

To possess an adequate acquaintance with the series of historic and artistic representations yet extant in the stained and painted windows of the cathedrals, chapels, churches, and ancient mansions of England, is a matter of no trifling importance to all professors, students, and lovers of architecture and of art in general.

We trust, therefore, that the following statement, drawn up, in the first instance, from the materials collected in the "Universal Art Inventory," referred to in a former number of our journal, will be found of use. As, however, the total number of buildings included in that catalogue falls short of a hundred, there can be little doubt that the list, although we have ourselves doubled its length, is still susceptible of very considerable augmentation.

The first step to this desirable end we take to be that now accomplished. What has been collected by the care of Mr. Cole, is now presented in a clear and compact form, separated from the foreign examples, and augmented by collection of the best authorities, to our readers.

Every architect, every clergyman, every proprietor of a historic mansion, in England, may now see, by a glance at our pages, whether the existence and the character of any stained-glass windows under his care, are duly recorded or no. In the latter case, we trust that few of such guardians of these relics of an important art will hesitate to fill up the gap which exists, and which is now brought to their own personal knowledge, or to communicate, in the proper quarter, the information at their command.

They should specify, 1st., the nature of the

building; 2ndly, the locality; 3rdly, the form of window; 4thly, the subject and mode of treatment; and, 5thly, the date, with the reasons for its determination. If any existing description be accessible, it should also be indicated.

The stained glass known to be now existing in this country, of date earlier than the year 1800, A.D., may be divided into seven groups, each containing the production of a century.

Glass of the Twelfth Century.

Only five examples of twelfth-century glass are recorded in the Inventory.

A window of the church at *Brabourne*, Kent, was at one time considered to be the only example of glass of the twelfth century in England. It contains geometrical patterns, slightly painted.

In the north aisle of the choir, and also in the Trinity Chapel, of *Canterbury* Cathedral, is stained glass of this period, representing the figure of Thomas à Becket, and medallions filled with minute figures.

In the vestibule of the Chapter House, *York*, are fragments of Norman glass.

In the Church of St. Denys, *York*, are the remains of a "Jesse window," attributed (doubtfully) to the year 1200.

The most important example of Early English stained glass in England is to be found in the great rose-window in the north transept of *Lincoln* Cathedral. It is dated "about 1200 A.D." In the central part is a representation of the blessed in Heaven, with Christ sitting in the midst. In the sixteen circles forming the outer part of the window are symbolical figures; and in each of the four trefoils at the angles is an angel tossing a thurible.

These two last examples, if the dates are correctly determined, mark the period of transition from the Norman to the Early English period of architecture. Glass fixed in the year 1200 A.D. must have been executed before the close of the twelfth century.

Glass of the Thirteenth Century.

Fourteen buildings adorned by English glass of the thirteenth century, are named in the "Universal Art Inventory."

In the aisles surrounding the Trinity Chapel, *Canterbury* Cathedral, are three painted windows, representing the miracles of Becket. In that on the north side, on a medallion, is a representation of Becket's shrine, with the prelate issuing from it in full canonicals, to say mass at the altar.

In the Church of Little *Casterton*, Rutlandshire, is a lancet window, with stained glass, consisting of lozenges described by margins of different colours, forming panels, with bosses in the centre differently constructed and richly coloured, the general ornament being foliage creeping over the whole surface. This is referred to the latter part of the thirteenth century.

The east window of *Chetwode* Church, Berkshire, is of Early English glass, with pictures introduced into a white pattern. Date, 1265—1270.

The rose-window of the south transept of *Lincoln* Cathedral is filled with fragments of glass collected from different parts of the cathedral, and chiefly Early English. The colouring is very rich. The east window of the choir aisle contains medallions of Early English glass, thought to represent incidents in the life of St. Hugh. The east window of the south aisle contains medallions of the same series. Date, 1235.

The north window of the Jerusalem Chamber, *Westminster*, is filled with glass representing the Slaughter of the Innocents, the Stoning of Stephen, the Last Judgment, the Descent of the Holy Ghost, the Ascension, St. Peter walking on the Sea, the Decollation of St. John the Baptist, and a mutilated shield of late execution, bearing the arms of Bishop Williams, those of the See of Lincoln, and those of the Deanery of Westminster; all more or less patched. The date attributed is about 1272 A.D.

In St. John's Chapel, Merton College, *Oxford*, are painted side windows, of white patterns with pictures inserted, of the latter part of Edward I.'s reign.

Salisbury Cathedral contains in the nave and aisles the remains of an Early English Jesse window, dating about 1240 A.D., and medallions, representing Scriptural subjects, not earlier than 1270 A.D. In the side aisles are windows of ornamental patterns, varying in date from 1240 to 1270 A.D. In the south transept, and in the cloisters are remains of Early English glass.

There is a five-light east window, of a Decorated white pattern with pictures inserted, of the latter part of the reign of Edward I. in the church of *Selling*, Kent.

In the Chapter-house of *Southwell* Minster are remnants of glass of the reign of Edward I. There is a small medallion in the second window from the east, on the south side of the nave representing a knight on horseback, tilting with a long spear under his arm, of the same period.

In *Trumpington* Church, Cambridgeshire, are windows attributed to the thirteenth and fourteenth centuries.

In the Church of *Westwell*, Kent, the east window contains what is called "the only known fragment in Early English mosaic painted glass existing;" two figures only, of the Almighty and the Virgin, remaining of the original four. In one of the side windows are "quarrels," of brown lines, enclosed in a richly foliated border. Date A.D. 1220.

In the north transept of *York* Minster, is the beautiful window of five lancets, known by the name of the Five Sisters, filled with glass, representing foliage and the principal geometrical forms, in coloured and ornamented glass bands and leads. Date latter half of thirteenth century.

In the church and in the refectory, of the Hospital of St. Cross, *Winchester*, are fragments of Early English, mixed in with other glass.

The contents of two boxes filled with fragments of Early English glass, brought from New College, Oxford, are placed in the cloisters of the library at *Winchester*.

Three windows of stained glass were added to the Norman Chapel of St. John, in the Tower of *London*, in the year 1240 (see the "Guide to the Tower of London"). They are not referred to in the Inventory. It is also questionable whether the glass last mentioned as being placed in the cloisters of Winchester, is correctly attributed to the thirteenth century, as it is also stated to be "principally of Wykeham's time," which was the close of the fourteenth and commencement of the fifteenth century.

Glass of the Fourteenth Century.

Examples of glass of the fourteenth century are about as numerous as those of the thirteenth century. The Art Inventory cites thirty-one.

The east window of *Bristol* Cathedral is filled with painted glass of the date 1320 (restored in 1847), representing a tree of Jesse. The lower lights contain figures of the Virgin and infant Jesus, prophets, and kings; in the upper tracery lights is a display of heraldry. Four side windows in the chancel are filled with coloured glass of the same date.

The east window of the choir of *Carlisle* Cathedral is filled with stained glass of the time of Richard II., representing the general Resurrection.

Painted glass of the close of the reign of Edward II. exists in the chancel of the church of *Chartham*, Kent.

The east window of the church of *Checkley*, Staffordshire, has a window, of five lights, decorated with pattern glass, with pictures inserted; the Crucifixion in the centre, knights and bishops and saints on each side. The date is 1320. There are two side windows, each with three lights, with one tier of medallions.

At *Cranley*, Surrey, the east window of the church is of painted glass; one of the spandrels containing the figure of the Saviour sitting in judgment, with the globe in his hand, upon which three great periods are emblematically indicated. The lower third is wavy, to denote the flood; the centre contains the tables of the law; and the upper part bears the cross.

The east window of the choir of *Exeter* Cathedral is filled with painted glass; that in the lowest and middle rows representing figures of saints under rich and varied canopies; in the uppermost row, figures of Abraham, Moses, and Isaac; at the bottom, shields of early bishops and benefactors.

The head of the east window of *Froyle* Church, Hampshire, is filled with glass representing heraldic subjects, of the latter part of the reign of Edward II.

The great east window of the choir of *Gloucester* Cathedral is filled with the finest stained glass of this period in England. It represents a long series of saints, prophets, and Jewish kings, larger than life. Date, 1345. The side windows of the clearstory retain much of their original glass, of the same date with the east window.

In the Lady Chapel, *Hereford* Cathedral, is a window, from St. Peter's Church in the same city, representing our Lord bearing the Cross and the Crucifixion, &c.

The east window of *Hitcham* Church, in Buckinghamshire, is painted in compartments, the upper ones containing figures of angels, each standing on a wheel, inscribed, in Lombardic capitals, with the mystic titles of the orders of the heavenly hierarchy,—"Virtutes, Dominaciones," &c. The other windows of the chancel contain considerable remains of stained glass of the same date, the middle of the fourteenth century.

In the Church of *Kingsdown*, Kent, is a light containing a representation of the Virgin bearing the Infant, of the same date.

The west window of the nave of *Lincoln* Cathedral has the upper tracery filled with glass of the middle of the fourteenth century.

The same date is assigned to the east window of the Church of St. Lawrence, *Ludlow*, which represents the history of St. Lawrence, in twenty-seven compartments.

In the chapel on the south side of the choir of the Priory Church, *Great Malvern*, Worcestershire, are three four-light windows, two of which are divided into compartments by labels, and represent Scriptural scenes from the Creation to the Deluge. The third window contains full-length figures of St. Peter and St. Andrew, the heads of which are gone. At the sides are angels bearing the emblems of the Passion,—the spear, the reed, the sponge, the scourge, the ladder, and the nails. Date, fourteenth century.

In the chancel of the Church of *Norbury*, Derbyshire, are windows of white patterns, with shields of arms inserted. There are painted windows in other parts of the same church, also of the fourteenth century.

Fragments of fourteenth-century glass are inserted in the west window of Christchurch Cathedral, *Oxford*. In the middle of the large five-light window of the north transept is represented the murder of Thomas à Becket, the archbishop kneeling before the altar of St. Benedict, his cross-bearer, the Saxon monk Grim standing at the side, the figures placed upon a diapered ground of red and blue. This is attributed in the Inventory to the fourteenth century, but it should be noted that the portrait and the miracles of Becket in the Trinity Chapel, at Canterbury, are ascribed to the twelfth and thirteenth century. Becket was murdered in 1175 A.D. It is hardly likely that his miracles would have formed a theme for the glass-painters of the fourteenth century.

In the ante-library of All Souls' College, *Oxford*, is a painted window representing John of Gaunt wearing a regal crown, with the globe and cross in his right hand, and the sceptre in his left. He wears a blue mantle fastened under his chin with a gold brooch. Beneath is the inscription in old characters, "Johannes Rex Hispaniæ, Dux Lancastriæ." This window is thought to have been placed in All Souls' by the founder, Archbishop Chicheley.

In the ante-chapel and Chapel of New College, *Oxford*, are windows filled with figures under canopies, and with a series of angelic choirs, dated 1379–1386. In the Chapel of Queen's College is also some fourteenth-century glass.

In the east window of *Oxted* Church, Surrey, are four large quatrefoils, containing the mystic beasts, or symbols of the Evangelists,—the angel, the lion, the ox, and the eagle, upon diapered ground,—fourteenth-century work.

The east window of the Church of *St. Rew*, Cornwall, consists of five lights filled with glass representing the Stem of Jesse, with branches containing figures of kings, prophets, saints, and the Virgin and Child. Date, fourteenth century.

There is some glass, apparently of the reign of Edward III., in the window of the north aisle of the Church of St. Thomas, at *Salisbury*.

Large remains of the original painted glass, doubtfully attributed to the fourteenth century, are to be found in the windows of the Church of *Stanford*, Leicestershire.

In the choir of *Tewkesbury* Abbey are several figure and canopy windows, containing full-length figures of kings, knights, and saints. Date, A.D. 1320—1327.

In the west window of *Wells* Cathedral, amid some French and German glass of the sixteenth century, are the figures of King Ina, and of Bishop Ralph, of Shrewsbury, dating about 1385. The eastern and two adjoining windows of the choir represent a tree of Jesse, terminating with the Crucifix, Abraham, David, the Virgin and Child, Solomon, Daniel, Ozias, and an undetermined figure, in the upper compartments, and the Day of Judgment in the tracery lights.

St. George, in armour of character appropriate to the date, is in the north-east window. In the Lady Chapel the windows are a confused mass of fragments, with the exception of the east window, which has been admirably restored by Willement. The colouring of the whole is superb. In the chapter-house are fragments containing the arms of Mortimer, and those of France and England quarterly.

In the Church of St. Nicholas, at *Wilton*, near Salisbury, is some French stained glass, in the Early English style; one panel representing the Marriage at Cana in Galilee. The date is about A.D. 1400.

The stained-glass border of the east window of the chancel of St. Peter's Church, Cheesehill, *Winchester*, is attributed to the fourteenth century.

The west window of *Winchester* Cathedral is filled with the remains of painted glass, selected from different parts of the church after the destruction of the rest by the troops of Cromwell. The top central light of the east window of the choir is filled with some glass of Wykeham's time. (This is stated on p. 148 to be the fifteenth century, and on p. 149 to be the latter half of the thirteenth century. William of Wykeham died in 1404 A.D.)

The heads of two canopies in the east window of the chancel of St. John's Church, *Winchester*, are also attributed to the fourteenth century.

In the clearstory and aisles of *York* Minster are windows of stained glass, all of the time of Edward III.

There is glass of the fourteenth century in the western window of the north aisle of the Church of St. Martin-cum-Gregory, *York*.

Portions of glass remaining in the windows of the College Hall, *Westminster*, bear the initials N. L., being those of Abbot Litlington, A.D. 1376—1386. The wreck of the splendid windows of Westminster Abbey has been utter. When we find that even the substantial, *solid*, bronze saints that adorned the *grille* surrounding the monument of King Henry VII. have for the most part been mutilated or stolen, we can but wonder that so little glass should have escaped the ravages of fanaticism, or of mere mischief. St. James, St. Bartholomew, St. Michael the Archangel, and St. Edward, King and Confessor, and founder of the abbey, seem alone to have been respected by the Londoners. The weight of each of these spirited statuettes is such as to make it no easy matter to tamper with its integrity. The abbey is now being gradually filled with stained glass, twenty-two windows having been thus ornamented within the last five years.*

ARCHITECTURAL STUDIES.

ONE letter out of a dozen, to the same effect:—

"Dear Sir,—If you or any of your readers will tell me the usual course of studies or duties that a pupil has to go through to become a thorough architect, you or they will infinitely oblige—An Inquirer."

We wonder how many anxious architectural pupils, or would-be pupils, *habitantes in sicco*, are puzzling themselves for a satisfactory answer to the question which reached us in the above form a few days since. The very wording of the request is an indication of the uncertainty with which the subject is beset. "Studies *or* duties," there is the rub. Which is it to be, after all? Is our term of pupilage to be spent mainly in studying systematically under the direction of an experienced teacher, or does the existence of "articles" merely bind us to the performance of whatever commands our principal may lay upon us, with the chance of picking up in time what we can from the details of his practice? That is the question, or one of the questions, which has to be answered, and which the less careless and more industriously-inclined of our embryo architects are beginning to ask rather pertinaciously, in various forms and through various channels. What is the usual course of duties that an articled pupil is expected to perform, in a great number of cases, is an inquiry not difficult to answer. He will copy the letters and specifications, and will perhaps take the former to the post-office. He will be initiated into the delicate art (requiring some nicety of manipulation) of laying drawing-boards and mounting tracings on paper or calico. If in a metropolitan office, he will answer the "office bell;" if in a provincial one, he will do battle with intruding "travellers" at the counter. If he acquit himself honourably in these duties, and acquire a habit of using his instruments with neatness, finish, and despatch, he will be promoted to copy the working drawings for the contractors' use, and may, in time, acquire sufficient insight into the mysteries to enable him to assist in drawing out plans and sections from the rougher sketches of his employer, with the aid of figured dimensions or verbal directions. And here, if he be possessed of no more than ordinary sense and application, he will probably remain, and, at the close of his articles, will find himself in possession of such a degree of knowledge of technical terms, of the general language and provisions of specifications, of the usual mechanical process of getting up drawings, as will enable him to make a respectable appearance in the eyes of his friends and relatives, if called upon by their kind partiality to furnish drawings for a house or a shop-front. If, on the contrary, he be a clever young man, with a natural ability for drawing and designing, he may acquire during his pupilage sufficient knowledge of his master's style of designing to render material assistance in turning out ornamental detail, and even to improve upon the established design of his office, and may have the satisfaction, before his articles have expired, of contributing largely to the effect of buildings, the credit for which goes, of course, to the principal in whose name they have been erected. This is, on the whole, we believe, a pretty fair *résumé* of "duties" of architectural pupils in offices which represent the average of the profession; and, on the whole, it may be said that the master, if he receive a good premium with the pupil, has the best of the bargain; since the pupil, even if thoroughly stupid, is, at all events, merely a slight hinderance in the progress of the work; and, if clever, or even fairly sensible and industrious, he is pretty sure to be positively useful, without necessarily entailing any trouble on his principal, who is (practically, at all events) supposed to do his full duty to the pupil in letting him have the run of the office, and the facility for picking up familiarity with whatever constructive or ornamental work is going on. How far this can be called "education" towards the desired end of becoming a "thorough architect," we endeavoured to point out some time since in a paper,* to which we may refer those of our readers who are specially interested in the subject. In the "usual course" of things, we are not aware that any particular line of studies is recommended to, or exacted from, the architectural pupil, so that the most comprehensive answer as to what is required of him at present, would be "*duties* — disagreeable: *studies*— none."

We do not mean to imply a sweeping condemnation of all members of the profession who take articled pupils; although we fear that with regard to the course pursued in a good many offices no condemnation could be too strong. In other cases it may be said that the system is more to blame than the individuals who, partly from mere habit, fall into the usual way of working. An architect in busy practice has really little time to bestow on training pupils; and is, nevertheless, if he be a man of any note in the profession, probably often solicited to take them rather against his will. Nor, on the other hand, would we say that the system of office apprenticeship is without certain advantages which are wanting in the far more systematic academical system of France. Living amidst the routine of work, and in the way of seeing the actual carrying out of the buildings for which drawings have been made, must, if properly made use of, confer on the pupil a better and readier knowledge of the practical working of his profession than can be attained by only producing ideal designs in an *atelier*; though we fear even this advantage is often practically denied, for we have heard complaints from many architectural pupils that they were never commissioned to visit buildings in progress, and saw nothing of the work beyond the stage of the drawing-board and T-square. Taking the apprentice system at its best, however, it has the practical advantage referred to; and we would rather desiderate a union of this with the academical system, than an entire relegation of architectural education to the latter. It is not our object, however, just now, to indicate the bearings of a thorough reform in architectural education, which must be a work of time, but to give some hints which may be useful to students for the present. The serious defect in our present educational system is, in fact, its utter want of system; all systematic knowledge of the history and principles of his intended profession must be acquired by the student's own private studies out of office hours; and though we do hold, most positively, that every architect who accepts a pupil is bound to give him the best advice and suggestion in his power on these matters, we are willing, on behalf of the students, to give such hints as may tend to supply the direction which each ought by rights to obtain from his own professed and (generally) paid teacher.

In the first place, then, we would say to the young articled pupil, make yourself acquainted with the general history and (as far as you can) the general principles of architectural design. This is commonly the very last thing that is done or recommended; and the consequence is, as we have before pointed out, that a student merely learns, not the art of architectural design, but the peculiar manner of his own master, which may be bad or good, artistic or inartistic. Many men thus fall into a facility for rapidly producing drawings in an acquired manner, and achieve a pecuniary success in their profession thereby, without leaving behind them one building which is the result of artistic thought and study, or anything better than mere mannerism. The only way to steer clear of this is to take a wide view of the subject at first, to acquire a knowledge equally of all the leading styles of architecture, and especially of the two purest and most typical styles, the Greek and the thirteenth-century Gothic, together with some idea of the conditions both of society and climate under which they arose, and of the antecedent imperfect styles out of which they were developed. Such a study, if carried on in an intelligent spirit, even without going minutely into historical dates and details, cannot fail to aid the student in attaining a clear conception of the real nature and importance of the art which he is endeavouring to learn; and to the same end we would recommend him to endeavour to form and retain something like a definite conception of the general principles which should govern architectural design as distinguished from other arts. We say this not with a view to encourage idle and utopian theorising, for which there was never less time than at present, but to urge the architectural student to consider *what it is* which he is undertaking to do in becoming an architect, and not to be a mere blind follower in the groove in which he happens to find himself. We will not just now recommend a regular list of works for perusal; but we may mention, as books which will assist a beginner towards a comprehensive view of the history of his subject, the "Course and Current of Architecture," by Mr. S. Huggins (accompanied by a chart representing at a glance, by a simple method, the chronological and topographical relation of the various past styles). Among works dealing with principles of design, too, we may recommend attention to Mr. Garbett's little work on that subject (published in "Weale's Series"), and to Mr. Fergusson's "True Principles of Beauty in Art;" not as endorsing all opinions to be found therein (for, in the latter especially, there is much from which we should dissent), but as works thoughtful in themselves, and suggestive of thought to their readers. Hope's "History of Architecture," may be read, too, with advantage, as also various papers, both in recent and in earlier numbers of the *Builder*; and the student having, through these or such works, acquired a general idea of the history and scope of his profession, will be in a position to take up a more detailed study of various styles, of which Mr. Fergusson's well-known "Handbook" will, perhaps, furnish the readiest means in the first instance of study and comparison of leading characteristics of style, while there are numerous works, many of which we hope are to be found in most good libraries, giving more detailed information and illustration of the most important varieties of architectural style. What we specially recommend in reading, as will be perceived, is a regular progress from general history to detail: by this course the student will obtain a much clearer and more intelligible notion of his subject, as well as a better judgment in regard to modern architectural works, than by merely reading promiscuously and at random, however diligently. We must know something of the whole before attempting to judge of parts and those who have formed a pretty comprehen

* Remainder in our next.

* "Generalisation in Architectural Education:" in the *Builder* for September, 1863.

sive idea of the whole history of architectural taste will be the less likely to be led away by the false and often almost barbarous taste of the present day, and the *ignes fatui* of some modern writers on art.

So much for literary study of architecture. While pursuing this course of reading hinted at, the student will have been gradually acquiring, we shall suppose, in his office, familiarity with the use of his pen and pencil, and with the general aspect and meaning of architectural drawings, plans, sections, &c. He should combine his theoretical and his practical knowledge for the production of designs of his own (which he ought to be allowed and encouraged to do in the office on occasion, instead of being, as he commonly is, compelled to confine this kind of exercise to his home or his lodging). And here, the best plan is to propose to himself designs in certain given styles of certain dates and work them out, with attention to the known details of the style chosen. General plan and composition may be practised in this way with sufficient scope for invention, while the endeavour to obtain correctness of detail in accordance with the style chosen will help to fix the characteristics of the style on the memory, and, at the same time, lay the foundation of a true feeling for refinement and consistency of detail. This latter quality of consistency is an important one; and though (as our readers know) we should be among the last to advocate mere copyism in architecture, consistency of treatment is essential to the good effect of a building, and can be best fostered and attained by the study of consistent and complete styles of architecture, before the pupil has learned to think for himself. The attempt to cook originality intentionally, and "of malice prepense," is very likely to result in mere oddity and grotesque; a fact of which we are not without illustrations. A very improving practice too, and a very pleasant one, is that of sketching imaginary architectural groupings and scenes, wherein the sketcher may sometimes, even unexpectedly to himself, strike out hints and ideas worth storing up for future use. Detailed ornament and decoration should also be studied; wherein Mr. Owen Jones's "Grammar of Ornament" will be found very suggestive and instructive, giving the basis and leading characteristics of each of the most important schools of architectural ornament; and the student will do well to note the ornamental details of the buildings which he sees in progress from time to time, and observe which are most effective, and which retain their effect longest. We give these general recommendations towards cultivating and stimulating the faculty of architectural design, where it exists. But as to the feeling for balance and harmony of composition, and the power of invention in plan, outline, or ornament, of this it must, in a great measure, be said, *Nascitur, non fit;* and those who are without this natural and innate faculty will scarcely achieve it by study, though they may become good archæologists and useful practical architects or surveyors.

For of course we must not ignore the fact that architecture, though indubitably in its highest forms a fine art, is based on practical needs, and has its very important practical side: as to which it may be said that in the generation just passed away the practical view of the subject too much took precedence of the artistic, while at present there is some ground for saying that the reverse is the case. As to what degree of practical knowledge, and of what kind, is necessary to render a man "a thorough architect," it is difficult to say anything very decisive, the boundary of the profession being so very indefinitely marked. No one man could possibly be even fairly proficient in all the subjects which are considered to come, or are, at all events, from time to time brought, into the architect's province; and the opinions of architects themselves, as evinced by their professional practice and studies, are very various on this point. A general acquaintance with mechanical statics and dynamics will be the first *desideratum*, though even this is a knowlege which many successfully practising architects do not, we imagine, possess. Thence we should naturally proceed to a more detailed acquaintance with the principal materials in which we have to work; of building stones and timber of various descriptions, their peculiar qualities, enduring capabilities, and resistance to atmospheric effect; knowledge which will determine which material should be used in special situations. With this should be joined an acquaintance with the manner and principle on which various materials are worked and put together, on some of which heads there are several well-known treatises; but not, as far as we are aware, any that are very recent. Weale's Series contains several exceedingly useful little works giving the outlines, and sometimes a good deal more than the outlines, of various practical subjects, such as practical masonry, concrete, drainage, &c. A proper knowledge of the method of working materials will prevent the young architect from using a material in a manner and in situations unsuitable for it, and enable him to check contractors in so doing,—not n unimportant point; for we have known builders of some pretensions, when not sufficiently looked after, put together masonry as if it were joiner's work; and as to joiner's work done to imitate masonry, *that* is, alas! an everyday occurrence. What we should call a true feeling for the right and truthful use of material, is one of the qualities which distinguishes a genuine architectural designer from a jerry builder, or a mere draughtsman: in connexion with this subject the student may derive some hints from a paper on "Design in Relation to Material," in the *Builder* for January 2nd, 1869. The study of drainage and ventilation, what has been done and what remains to be done in these matters, must receive attention, and on these and other practical matters we should impress the student with the importance of keeping from the first a note-book in which to enter whatever special observations he may be able to make on practical points, both for impressing them on the memory and for future reference; remembering Bacon's aphorism, "that reading maketh a full man, writing an *exact* man." There are of course other materials besides what we have named, the conditions of which must be taken account of, as terra-cotta, tiles, slates, and other roofing materials, and methods of roofing, cements and plaster (the latter, let us say, to be used mainly for practical purposes, and very sparingly, if at all, in decoration). Then the architect, if he commence operations with a commission in domestic architecture, will find that his client expects him to be deep in the mysteries of cooking ranges, heating apparatus, bell-hanging, and other like matters of permanent house furniture, of which the more he knows the better, certainly; but concerning which we have our doubts whether they come so completely and decisively within the architect's province as is commonly supposed: at all events, he cannot compete with the tradesman who manufactures and the workmen who fix these things in practical knowledge of them, and must, in the end, trust a good deal to their honesty, though able to direct them as to general principles and methods, as to which Professor Kerr's work on "the Gentleman's House" will give useful information. A more important part, in our view, of the domestic architect's duties should be the overseeing and directing of the designs of the furniture and fittings in any house of any importance. Commonly, the architect's aid is dispensed with just at this point, so that too often the principal rooms of the mansion which he has designed with care are made hideous with upholsterers' designs of unmentionable nature, and bearing no relation whatever to the general design of the house. Architects should study furniture design and decoration, and endeavour to get this part of the business more under their control, which would be a first step towards seeing something more artistic displayed in the show-rooms of our leading manufacturers. Acquaintance with the use of the theodolite, and some degree of practice in surveying, may be considered part of an architect's education, as he will often find it necessary to survey a site himself; though we do not recommend the general union of the professions of architect and surveyor, which are, in fact, quite distinct in their nature and objects. In a general way, a knowledge of the leading facts and principles of chemistry (on which several published works supply adequate information), will give the architect greater certainty and facility in dealing with and providing for various possible failures of material; and a knowledge of geology in general, and of the particular strata of the district in which he is about to build, will not carry him "too far a-field," but will materially assist him often in the important duties of providing firm foundation, adequate water supply, and efficient drainage for the building he is about to erect. In such matters, however, experience and observation must go hand-in-hand with theory.

As to proficiency in drawing, in the method of exhibiting ideas upon paper, a thorough knowledge of and aptitude in perspective drawing is, of course, necessary; for an architect should, in fact, design in perspective, in his brain if not on paper; the geometrical elevation being the necessary method of putting his design into a workable and measurable form. This is, in fact, almost purely a matter of practice and habitude; for although elaborate treatises on perspective have been written, giving numerous examples of the method of dealing with various objects, &c., there is, in fact, but one problem in perspective drawing, viz., to find the apparent position on a plane of any given point on a geometrical plan and elevation, and any student who has once learned this can put it in practice in any form. After knowing the general principle of perspective, sketching from existing buildings will be one of the most certain and ready methods of attaining ease and rapidity therein, as well as being a most useful practice in calling the student's attention to details in the working out of a design which, on a mere inspection of the building, he would miss, in nine cases out of ten. He must, however, if he is able to make sketching tours, beware of misapplying the knowledge and practice so gained, and of working up in his own designs, without due consideration, materials which are only fitted for the position in which he has sketched them. Sketching is not to supply materials for "cribbing" from, or to supplement, but only to stimulate the architect's own exercise of thought. The use of water-colour in getting up views of buildings for committees and for other purposes, is of a certain value, and is a very pleasant study in itself, but of less practical importance than is sometimes supposed, as it does not necessarily tend to any furtherance of the capacity for strictly architectural design; on the contrary, a showy water-colour drawing is often made available to conceal various defects and lapses of design. The power of sketching the human figure with general truthfulness and spirit will enable the architect to indicate the sculptured decorations of his building in a presentable manner, and will further put him in the position to consider, in conjunction with the sculptor, the nature and character of the design which will be most suited to his building; but let him not be carried away with the idea of being sculptor (or cartooner) and architect in one. Any sculptor or painter will assure him that to design a large figure-subject well and correctly requires undivided study given to that one object: if he do not believe this, let him look at some specimens of architects' sculpture which are occasionally to be seen in drawings and in buildings (chiefly Gothic), and if these do not convince him, our caution is in vain.

In putting together some general hints on architectural study, suggested by the request which we have placed at the commencement of this article, we have purposely abstained from referring to the many facilities which exist in London for self-education, in the way of museums, exhibitions, lectures, and so on, as we are writing for the students of this country generally, and not for the metropolis alone. In conclusion, let us add, that no degree of general education which does not involve neglect of special education, will come amiss to the young architect; a knowledge especially of one or more of the continental languages will often put him in the way of getting more extensive information on subjects connected with architecture than he would otherwise obtain, and may qualify him for a commission which he could not otherwise conveniently carry out. It has been truly observed by an eminent writer* that there is no line of study which, if taken up thoroughly and carried out to its furthest limits, will not bring the student into contact with the widest fields of human interest and knowledge; and of no profession can this be more truly predicated than of architecture.

Velocipedestrianism. — According to the *Liberté*, a bootmaker has just invented a boot with small wheels, which will enable us to go as rapidly as a horse, with the facility of stopping at a moment's notice. What is this, however, but skating on wheels, which we have all seen at the Crystal Palace or elsewhere. It is a curious and no doubt pleasant recreative mode of locomotion, or velocipedestrianism, but can it be made suitable to roads? That is the question.

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* Mr. Froude, in his "Inaugural Address at St Andrews University."

DRINKING FOUNTAINS AND PURE SPRING WATER.

IT is a curious thing to note how the great powers that be sometimes go about things. There are two important questions at this moment before the British Parliament, of most momentous import to the whole British public: one is, that the said public shall be from henceforth compulsorily educated; and the other is, that intoxicating liquors generally should either cease to be drunk altogether, or, at least, the sale of them confined to very fashionable localities; and, to help to wean the poor helpless public from the temptations of alcoholic liquors, a society some time since sprang into existence, and a series of fountains, as they are termed, have been put up by it in all the poorer districts of London, for the purpose of supplying people with what the Drinking Fountain Society call "pure and wholesome water." Now, it is a curious fact, that all the fountains are carefully boarded up and the water-supply from them made to cease during the whole of the *winter* months and cold weather; indeed, just at the time when the sale of spirituous liquors is at its maximum, "to keep the cold out." Why is this? Surely the public, the lower orders, must drink in the cold weather as well as in the hot; and the temptations to go astray are quite as great, if not greater, in the cold of winter as in the heat of summer. But so it is, and doubtless it is all right and proper; but as the season has just commenced when all these boarded-up fountains are uncovered, and the water from them allowed to flow again (at least by day, for we have found them shut up through the night, even in summer), it seems worth while to say a few words about these drinking-fountains, on the fountains themselves, *architecturally*, and on the sort and amount of water which they supply. For this purpose we would call attention to the recent elaborate and instructive Report, with an appendix, on the subject of the London water supply: it would seem to call for some notice beyond what it is likely to meet with at the hands of those who look on it only as a sanitary matter. We are what is called a practical people, so that in the event of any change for the better taking place, either in the kind of water supplied to Londoners, or in the mode of its supply, we may be quite sure that *art* will come in but for very meagre notice, if for any at all. A few words, therefore, may not come amiss about it before anything is finally determined on. To begin at the beginning. *Rain*, says the "Report," is the source from which all water-supply is obtained, and there are *three* modes by which the water thus provided by nature is made available for the supply of towns. We ask attention to them. The *first* is to bore down into the porous strata, and thus to come directly to the purest of all water, that which springs up into wells, and which sometimes reaches the surface and bubbles up as springs. *Secondly*, that which is obtained from rivers, and which is the natural drainage of a country. The Thames thus drains not less than 6,000 square miles of land, *i.e.*, the rainfall over this area falls into the river bed. The *third* mode is by forming large reservoirs in hilly districts, and then to collect and store up in them the rain or surface water, this being conveyed by pipes to where it is wanted. Be it observed, that none of these methods ensures the collection of *pure* rainwater, the water being necessarily mixed with earthy and mineral matter by the fact of its passing through or over the ground on which it falls. It seems, therefore, a pity, as we have before urged, that some plan has not been devised for collecting pure rain-water from the tops of houses into tanks or cisterns. This would be a fourth mode of water-collecting. Rain, it is said, is the very purest and softest of all waters, it being the result originally of simple evaporation. If a glassful of Thames water be simply allowed to settle so as to become clear by the mud falling to the bottom of the glass, this water on being tasted will be found to be *soft* and almost like June rain-water. Or, should any one be bold enough and hardy enough to *bathe* in the river, he will find the water delightfully soft and *pure*,—pure barring the mud. If, then, after these two simple but bold experiments, the same person will dive into a common plunge-bath, and venture to taste the water from one of the common drinking-"fountains," as they are so poetically called, he will discover that though the water be said to come from the same source—the Thames, the bath water will feel like pounded ice, and as hard; and the taste from the "fountain" like unto some diabolical semi-warm mixture of he knows not what; as hard as cast iron and about as palatable! What, therefore, we would ask, do the water companies do with the water? Why not leave it alone, and allow the pure river water, after depositing its mud to find its way into baths and fountains in its *natural* state?

But, it may be asked, why take the "river" water, with all its impurities, about which there is so much in this Report, all the great scientific authorities contradicting each other about it, no two of them seeming to agree? Now, it so happens, says the Report, that no less than two-thirds of the Thames basin consist of porous and permeable strata, such as chalk, oolitic limestone, and sand and sandstones of various kinds, all of which receive and absorb a large proportion of the rainfall, and store it up in vast subterranean reservoirs, forming well and spring water, water made pure and palatable by great natural processes, costing nothing but the getting at it, by the sinking of wells and pump-pipes. This grand natural process reduces organic matters to a minimum, and mineral matters to the smallest amount, is independent of the seasons, gives uniform temperature, and the filtering process as perfect as can be; for, as the "sections" show, from 50 ft. to 300 ft. thick of sand, or limestone, or chalk, are gone through. It is something wonderful what an amount of evil is put up with by the poor British public. There is all this exhaustless supply of the purest and best of water under our very feet, and needing only the most common of mechanical appliances to come at; yet is it never even thought about, while the substance called water in common use is really unfit for any purpose whatever, either for washing or drinking.

But there is another aspect of this important subject which will, if not at present, at some future day, meet with the attention which it is worth. If we travel into countries and towns uncivilised and *barbarous* enough, such as Constantinople, or Damascus, or even Utah, on the Salt Lake, it will be found that not only is there a plentiful,—nay, magnificently liberal supply of the purest and most delicious of water,—but no pains and expense have been spared to render this supply not only complete, but pleasant to eyesight. The reader will see nothing of this in the Report. London and Constantinople or Damascus are wide enough apart; but in the last-named cities *the water is alike utilised and made beautiful*. Instead of the little dribbling, sickly streams which flow from our drinking-fountains, and which take their time to fill a wine-glass, and which in most cases spout out of a foot or two of paving-stone into a shallow basin, the size of a common dinner-plate, the real fountains to be found in those far-off and barbarous cities are really works of art, to be seen a mile off, with water enough to be at least seen and heard as it falls; a something to pause to look at, and a happiness to see. A photograph of a beautiful fountain worthy of the name, near the "Sweet Waters" of Asia, and quite a gem of Moslem architecture, may be seen in Gautier's Constantinople, together with another,—but far too big and luxurious for our shopkeeping nations,—that of the fountain of the Sultan Selim. Constantinople, be it observed, is a barbarous and almost heathen place, and a remnant of old and fast-failing times and ways of work, and unhappily modern improvement will consist, when it thoroughly seizes hold of this place, in doing away with all these quaint "water supplies," and substituting "taps" everywhere. Let the intelligent artist reader balance the loss and gain mentally and bodily. London improvements would seem now to consist mainly in pulling down as many houses as possible, and forming large, awkward, open waste spaces: would it not, we would ask, be a good plan to occupy some of these with drinking-fountains worthy, at least, of the name, with the water supplied from the lower strata, as explained in the Report,—*i. e.*, with well or spring water, of which there is such an inexhaustible supply. Such water is always pure, drinkable, and of even temperature, and constant in quantity. In these fountains the *water* for which they are constructed should show itself visibly—*i. e.*, it should be seen that the fountain was made for the water, and not the water for the fountain;—large open basins and a perpetually-running stream. It would be difficult to devise a plan more likely to be acceptable to the public, especially the poorer and out-door public. It would be easy to name some score of open spaces where "fountains" such as we have indicated would be useful and desirable. Nothing can be worse than the now so fashionable mode of improving London. Everything is destroyed, and there is nothing in idea to replace the old plan of streets, bad as they are thought to have been, or are. We may, before it is too late, learn something from Constantinople and other of those distant and really wonderful places, truly called cities, built and planned so long before science and "art principles" had any existence, but yet at a time and by a race of men whose ways we may well try to recall and humbly imitate and follow. There is, surely, a long distance between a Turk and an Englishman; and if the Sultan and his subjects are to be civilised by the adoption of English ways, let us borrow something from them before it is lost for ever.

One other thing there is in this water-supply question which ought not to pass without notice, as it is not a little curious, and shows the universality of the great laws of nature. Everybody has heard of the impurity of London river-water, one way or another; but the Report says, that taking properly-filtered samples of Thames water, we shall see an "extraordinary regularity in the albuminoid character of good town waters during summer months." Thus it would appear, that Thames water, Manchester water, Edinburgh water, and Glasgow water from Loch Katrine, show in a most remarkable way the great constancy in the amount of such impurities as *ammonia*. Thames water gets even sewage. Manchester water comes off the moorlands of Derbyshire, so it is pure; Edinburgh, from springs some miles from the city itself, yet is the per-centage of ammonia nearly uniform. It is certain, therefore, that there are great natural processes at work, always tending to equalise the quality of all natural water that is freely exposed to air and light.

EDINBURGH PROSPECTS.

WHEN George Heriot, goldsmith to James I., left his means and estate for the purpose of building and supporting an institution for the maintenance and education of poor boys in his native city, he set an example which has been followed by numerous imitators. Such is the plethora of wealth devoted to this purpose in Edinburgh that it has come to be looked upon as an evil, and means are being taken with the view of breaking through the monastic system, which is found to have a baneful effect upon the boys, and for giving a wider scope and aim to those richly-endowed institutions. Our readers will be surprised to learn that the endowments of these pauper palaces nearly equal in amount the whole educational endowments of the metropolis. Besides being hurtful to the boys, the use of these institutions has a demoralising effect upon well-to-do parents perfectly able to maintain and educate their offspring. In short, the building of pauper palaces has reached its acme, and those wealthy nobodies who wish their names to be associated with some grand structure must look for some other outlets. We may call the attention of such to the fact that Edinburgh has no town-hall, public library, or public baths,—deficiencies we hope ere long to see supplied in this or some other way.

No city of its beauty and importance that we know of has less ecclesiastical architecture worthy of admiration than Edinburgh. Trinity Church disappeared to make way for the North British Railway Terminus; Holyrood Chapel is in ruins; St. Giles's worse than a ruin; and the modern churches,—Classic and Gothic,—are mediocre in the extreme. This defect is likely to be remedied by the munificent bequest of the late Miss Walker, of Coates, to the Episcopal Church of Scotland. The estate left by the deceased is estimated at about 250,000*l.*; and, after paying all preliminary calls upon it, a sum of upwards of 200,000*l.* will be at the disposal of the trustees. The bulk of the estate consists of building-ground at the west end of the city, from which an excellent site,—at the western termination of Melville-street,—has been reserved, and on this is to be erected a cathedral at a cost of not less than 40,000*l.*

Provision is made for the officiating clergy; and in order to procure a suitable design, four or six architects are to be asked to compete. Other churches may be built and endowed by the trustees, the first of which to be at the east end of the city, to supersede St. James's, we

presume, which has an ordinary street front, in unison with the line of houses of which it forms a part.

At the southern suburb of Grange a new church is in course of erection, intended to commemorate the name of the late Dr. James Robertson, professor of church history in the University of Edinburgh. It will occupy a commanding site at the angle of Kilgraston-road and Strathearn-road, and is to be seated for a congregation of 800. It is to consist of nave and transepts, with a spire, 150 ft. in height, in the centre of the west gable. It is to cost 6,000*l.*, and the design is the first realized one, in this branch of art, of Mr. Robert Morham. We shall watch its progress with interest.

A meeting has been held with the view of taking steps for the erection of a suitable memorial of the late Sir James Young Simpson.

A subscription list is also open to raise funds for a monument to the late eminent divine, Dr. Chalmers.

The Albert Memorial is still in the hands of the sculptors: we hope the question of site will be reconsidered. The Queen's Park, at the foot of Arthur's Seat, is about the last place where we would think of placing an equestrian group. The last public act of Albert the Good was to lay the foundation stone of the Industrial Museum. No more appropriate site for his monument could be found than in front of that building when the new street shall have been opened up.

KNIGHTSBRIDGE BARRACKS AND HYDE PARK.

BETWEEN the Corner and Albert Gate, and thence to the Guards Barracks, a distance of nearly one-third of a mile, the narrow border, varying from 100 ft. to 30 ft. in width, discloses the most perfect and tasteful example of shrubbed landscape gardening. With every difficulty to contend with,—a dull boundary wall, the backs of mean houses, and range of lofty, wide-spreading trees,—simply by raising and varying the surface with grassy hillocks and flowering shrubs, this hitherto repulsive margin has been transformed so as to excite the admiration of promenaders; and, together with the vicinal dell at the foot of the Serpentine, has become a thing of beauty. Here, however, all enchantment ends; for onwards, nearly a quarter of a mile as far as Prince's Gate, the Cavalry Barrack, with dull walls, gates, and open windows, borders the drive, without any intervening space. Sentinels at the entrances patrol the route; and, save that the officers' quarters stand back, presenting something of a more decent elevation, any factory or antiquated workhouse would form a boundary as appropriate to this route, which ought to be the promenade of fashion.

From the barracks westward to Queen's Gate, a little over a quarter of a mile, the park border is beautifully timbered, forming a wider margin to the drive; and here a shrubbery continued to the lovely flower walks, connecting Kensington Gardens, would perfect the whole circle, and prove a real solace to the walking community, as well as those who ride and drive; but so long as the barracks, which border the way for nearly 400 yards, occupy that position, it would be idle to attempt any further improvement; for, in fact, the quadruple range of carriages on the lounging drive turns back from the Serpentine Fall towards Hyde Park-corner.

Our metropolitan landscape gardeners certainly deserve public gratitude for the perfection of their floral display, and that under all the disadvantages of London smoke: the security of the flowers, and the admiration they attract, are sufficient evidence of the value of their labours. They have made a little Eden of the site of the old demolished guard-house, opposite the late toll-bar entrance to Kensington; and now the whole Park circle, save the interval from the barracks to Queen's Gate, has become a place of resort the most agreeable and refreshing.

The area covered by the Knightsbridge Barracks is rather over 4 acres: they occupy a quadrilateral space of 220 yards by 60 yards, and then the stables cover a plot of 153 yards, diminishing in width to 30 yards at the western extremity. Long since, on an inspection of the quarters, the building and its arrangements were condemned as unsuitable to troops. The first-floor of dormitories, *built over the stables*, is but 8 ft. in height. In front it looks into the most important highway of the metropolis; in the rear the windows open upon the fashionable drive, and the troopers lounge and recline in undress in full view of the passing traffic.

When first built, perhaps 150 or more years back, the location was no doubt appropriate: it was then ultra-urban, and on the road to the Royal Palace: it is now closed in by a dense population; and, as in all instances of the kind, the vicinage is tainted by night ramblers, and the low value of property there, save in public-houses (of which there are seven within 200 yards' distance), contrasts remarkably with the mansions and sites on the Kensington-road line.

At present the south side of the park has become of twentyfold value, excepting only this immediate line, where the barrack wall constricts the public highway along its whole course; and being in a densely peopled neighbourhood, it is not so suitable for troops as a position somewhat more distant, such as Chelsea, for instance, where the infantry guards have been for some time advantageously stationed. There they have certainly better barracks, good air, and more appropriate position; and, if not too far for infantry, it cannot surely be an inconvenient quarter for a cavalry regiment.

Taken in a financial point of view, the ground occupied at Knightsbridge, if sold or let for building, would realise an amount sufficient to erect barracks for the whole regiment of guards; whereas the present building accommodates but 420, and new barracks, near the infantry guards, would give domestic comforts to the men, while their withdrawal from the park would at once trebly enhance the value and change the aspect of the richest and most prized position of London,—the range between Knightsbridge and Kensington.

There is still another consideration which, as it affects the whole population, ought to have some weight, and that is the necessity for widening the Great Western-road, and the formation of a park side-walk under the shade of the fine range of trees extending along the whole south road to Kensington. The surrender of 18 ft. or 20 ft. of park border, *preserving the forest trees intact upon the footway*, and throwing the *present external footway* into the carriage-road, as recommended in last week's *Builder*, would in no sense diminish the effect of the park, whilst it would enlarge the driftway, on an average, 12 ft., and thus effectuate the improvement so earnestly desired by the Commissioners of the Hall of Arts, and by every resident of this fine quarter. The rapid advance of the Hall of Arts, of the South Kensington Museum-buildings, and of numerous residential structures which now occupy the important south-western district, demand the concession of an improved road and footway. The population has increased; and as the city spreads, every foot of free intercourse and park privilege becomes of vital importance. When the Kensington Guard Barrack was demolished, Government converted the space to a garden. A similar dedication to public uses of the Knightsbridge Barrack site would, doubtless, meet with general approval and gratitude.

CHURCH OF THE HOLY INNOCENTS, FALLOWFIELD, MANCHESTER.

THE corner-stone of the Church of the Holy Innocents, at Fallowfield, was laid on the 4th inst., with full Masonic ceremonial, in the presence of the Grand Lodge of East Lancashire, by Brother the Hon. Wilbraham Egerton, M.P.

The site of the new church, which has been given by Lord Egerton of Tatton, in addition to 1,000*l.* subscription towards the building fund, is on the north side of the new road leading from Fallowfield to Chorlton, and adjoins the Didsbury high road. Space is also provided for the erection of schools and a parsonage. The church comprises a nave, about 89 ft. by 25 ft. internally, divided into five bays or arches, 17 ft. wide, and about 62 ft. high from the ground to the ridge. On each side of the nave are aisles about 13 ft. wide. This portion of the church is lighted by a two-light window, having ornamental heads in each bay of the aisles, and by a large window of bold design in the west end of the nave. The clearstory consists of lofty coupled single lights, with cusped heads, in each bay, the pier between supporting the intermediate roof principals. From the moulded corbels at the foot of the hood moulds to the nave arches rise wall-shafts, with moulded caps and bases, which support the roof principals. The chancel is about 38 ft. long and 22 ft. wide, and is raised above the floor of the nave by several steps, which occur in the centre of the chancel-wall. The chancel is lighted by three clearstory windows on each side, and five in the apse, which is on plan a semi-decagon below and a semicircle above. On the south of the chancel are two moulded arches, opening into a side chapel or aisle, which is also connected with the south aisle of the nave by a single arch. On the opposite side of the chancel are the vestry, a lofty organ-chamber, with arches opening into both chancel and north aisle of the nave. The pulpit is placed at the north-east corner of the nave, touching the foundation-stone. The font is near the south porch, at the west end of the south aisle. The tower, which forms a second porch, and a spire, are at the east end of the south aisle, next to the chapel, and have been most carefully designed with reference to their appearance when executed. The exterior of the building will be executed *en pierre point*, with stone dressings to windows, &c., and the window-tracery may be of Berlin red terra-cotta; the main internal columns and arches to be worked in red Runcorn stone, with white stone for caps and bases. The church will accommodate about 700. The builders are Messrs. Ellis & Hinchliffe, and the architects are Messrs. Price & Linklater, of Manchester and London.

SOMETHING MORE OF GLASGOW.

THE majority of the city graveyards in and about Glasgow are in a very wretched condition. The Necropolis is very well looked after, as are two or three more minor ones, but we have visited a few which are simply a disgrace to any civilised community.

Extramural burial in Glasgow must become the order of the day. In a Roman Catholic burial-ground "Lairs" have been purchased and paid for, and yet others besides the owner's family and relatives have been buried within. A mean, money-grubbing, and unchristian desire has been shown on the part of those who receive the burial fees in this graveyard, with an utter carelessness and heartlessness demanding censure if not reprobation. Two or three miles outside Glasgow, at a place called Dalbeth, there is another Roman Catholic burial-ground, which was enlarged a few years ago. There are graves here, let us say charnel-pits, into which shattered humanity has been carted and shovelled down, not unwept by some,

"But unhonour'd and unsung."

Poor Pat and poor Sandy have gone down here through infernal traps in deal boxes, or coffins if you will, with a few shavings for their shroud, but no *De Profundis* for their souls. "It was good enough for them: if their relatives could pay for it they would have it the same as others." So runs the refrain. There are some natures who will speculate on making fortunes by the dead as well as by the living, and who, to use the words of Wordsworth,

"Would peep and peep and botanise
Upon their mothers' graves."

The laying out of old city graveyards, and making them places worth visiting instead of avoiding, making them contribute to the beauty and health of their locality—has not yet been attempted in Glasgow. London has, however, given a precedent, which may well be followed out with advantage.

Window gardening, which has done so much to elevate the taste and feelings of the poor in the low quarters of London of late years, is an occult science in Glasgow. We looked in vain through the dreary passes of Glasgow for these bright oases in the desert, but found them not. Where there is a love of flowers there cannot be a love of filth.

On the north and south sides we noticed several old thatched structures, and some of these are in the vicinity of factories, where a spark at any time might, during the night, do the work of an incendiary, and result in a conflagration and loss of life that the city of Glasgow would never forget. These thatched houses on both sides of the Clyde ought to be at once condemned and removed; but we doubt if the sanitary authorities of Glasgow at present will dream of touching such picturesque bits on their social canvas, as they are so exquisitely charming and so highly inflammable.

At Whitchurch, a few miles out, there are some self-contained dwellings in course of erection for the working-classes. We may have occasion hereafter to say what we think of them. Of that class within the city we have spoken with truth and without exaggeration.

The present City Railway construction through Glasgow will not add to the beauty of the city, though it will certainly add to its prosperity. But we do not see why the underground system should not be attempted, as it could be with every chance of success. A tunnel under the Clyde, on the line of the Bromielaw, will also be soon, if it is not at present, a necessity.

CONDITION OF LINCOLN.

SIR,—Under the head of "Stagnant Lincoln," your last week's issue contains a letter that requires contradiction.

There are no fens in Lincoln or its immediate vicinity. The subsoil is lias, capped on the summit with the oolite, from which the cathedral, the castle, and other stone buildings are erected. The lower portion is covered by an alluvial deposit of sand, some two yards in thickness. The stone, sand, and lias clay are extensively used for building purposes and for brickmaking.

There are no dykes filled with stagnant water. The Witham, a running stream, delivers into a navigable pool called the Brayford, which also receives the waters of the Fossdyke, a canal cut by the Romans from the river Trent at Torksey, to the Witham at Lincoln. The Fossdyke is connected with the Trent by locks; and as the passage of every vessel through the locks necessitates the issue of a large body of water into the canal, it cannot be called a stagnant water.

The Brayford pool is bounded on two sides by wharfs and warehouses, on the other by the railways. The Fossdyke and Witham, flowing through it, run down to Boston. Locks are placed at their exit from the city, to enable vessels to unload upon the wharfs along their course.

With the exception of the new towns that have sprung up in the recently-developed iron districts, few places have progressed so much or kept so well up with the times as Lincoln; neither does the writer know a prettier place. Approached from any side it is a splendid picture. The blending of the various tints of the slates, tiles, stone, and bricks in the ancient and modern buildings on the crest and escarpment of the hill, mixed with the foliage in the grounds and gardens, is beautiful.

Along the edge of the table-land are built the Cathedral, the County Hospital, the Castle (including the county prison and Assize Courts), the Lunatic Hospital (where the system of non-restraint was first practised), the Penitent Females' Home, the Workhouse, and the N.L. Militia Barracks and Store-rooms. The city Assize Courts and prison are built lower down; and on the opposite side of the valley stands the County Pauper Lunatic Asylum.

Lincoln is the metropolis of the portable engine and agricultural implement trade. Its four principal factories employ several thousand work-people, whose productions are sent all over the world. There are also two large chemical works. An extensive trade is done in flour, malt, and grain. An excellent cattle-market is held weekly; and five lines of railway radiate from the city.

The assertion that the *Builder* is scarcely known in Lincoln is simply nonsense. Daily papers are brought in from Nottingham, Leeds, Manchester, Hull, Sheffield, and London; the first at five a.m., the others in due course as the trains arrive. Then there are the evening papers from Manchester and London by *last* trains. Three local newspapers are published and well supported in Lincoln. The Mechanics' Institute and Reading-room has been established many years with great success: the terms are low, and it is well attended.

A school of art was started a few years since, and its pupils rank among the highest in the Government reports. In the Grammar-school are educated many scholars, at a moderate charge. A fair proportion of them have obtained university distinctions, two recently at Cambridge.

An Act of Parliament was obtained a short time since, authorising the sale of some screeds of commons land, cut off by a railway. The proceeds were spent in draining, planting, and improving the remainder, and a good class of houses are being erected on the land sold. Another Act now awaits the royal assent to convert a further portion of commons land into an arboretum, a strip along the top to be sold for the erection of a superior class of villa residences. A large balance accruing from these sales is invested, and furnishes small annuities to aged householders and freemen.

All the churchyards are levelled, planted with shrubs, and enclosed. The cemetery-grounds are beautifully laid out, and kept in admirable condition.

Owing to the increase in population by the development of the local trades, original shares in the Waterworks Company, Gas Company, Corn Exchange and Covered Markets Company, and Bank are very valuable.

Workmen's cottages are in great demand, many being bespoken before the roofs are on. The following are some of the principal works now in hand:—New gaol for the Lindsey division of the county to hold 200 prisoners; two churches, one to accommodate 1,000, the other 500, sitters; Wesleyan schools, new infirmaries at the workhouse, a private estate of some four or five acres is laid out, and villas are being built upon it.

Tenders are accepted for pulling down the present Baptist chapel, and replacing it by a larger. The guardians have accepted tenders (about 1,300*l.*) for improving the sanitary condition of the workhouse, by altering the privies into water-closets, remodelling the drainage, and constructing tanks for filtering the sewage. Between 3,000*l.* and 4,000*l.* were recently granted by the county magistrates for the purchase of land, and arrangements for conveyance thereon of the sewage from the County Pauper Lunatic Asylum.

Market days are attended by a class of farmers second to none in wealth, appearance, and intelligence: a large influx of their servants visited the city lately, being May-day time; they were respectably dressed and well conducted; and to exemplify their prudence, in addition to their large purchases of drapery and other goods, 1,700*l.* were paid into the Lincoln Savings Bank by them in one day, exclusive of what might be paid into the Post-office Savings Bank.

When the new Lindsey prison is completed the few prisoners in the city gaol will probably be confined therein, the city assize courts and gaol removed, and the site appropriated for a new town-hall which is talked about, and is much wanted.

In passing through the city the river receives much of the sewage; and although it is flushed occasionally by means of the sluice-gates at the Brayford, a proper system of drainage is required. This is only a question of time: the Corporation have three schemes, by eminent engineers, and when the learned men of the country settle upon the best mode of disposing town sewage, that method will doubtless be adopted in Lincoln.

The want of a row of trees along the High-street cannot be construed into an aversion of the citizens to foliage in its proper place. If a man likes the church there is no reason why he should bestride its ridge. The Witham level is too low to admit of a continual stream of clear water flowing from it along the street channels; and I fear your correspondent, "Gargoyle," is not a ratepayer, or he would have reason to know that the Local Board are doing something

A LINCOLN HOUSEHOLDER.

WIND PRESSURE ON ROOFS.

IN an article on this subject, the *Engineer* says:—

Having ascertained the conditions of strains due to a uniform load upon the various parts of the roof, and tabulated the results, let another table be compiled showing the effects of a partial loading, and then the necessary counterbracing can be introduced. But there yet remains a very important element of stiffness to be added, namely, the wind ties. These are required not only to assist in resisting the external violence of a storm or hurricane, but also to prevent the pressure from underneath literally "blowing up" the roof. If the wind once gets "well under" a roof nothing but the fact that the greatest care and precaution has been bestowed upon its bracing will prevent it being carried away. We have known an instance in which, from want of attention to the proper tying together of the principals, the whole roof was lifted bodily off the side walls and landed in an adjoining field. The storm continuing, the walls gave way also, and the cost of restoring matters to their original condition amounted to 1,500*l.* The fault of most wind-ties is that they are not carried down low enough. There is no necessity for tying the principals together by wind-ties. They are already amply secured by the purlins and the whole covering in general. The point to be aimed at is to tie them back upon the respective supports, so that the principals could not be lifted without taking the foundations with them. Basing our estimate upon the data already assumed for the maximum pressure of the wind, the upward force would be equal to 55 lb. per square foot, and would consequently lift nearly that weight vertically. Unless, therefore, the insistent weight of the roof per square foot were greater than this amount, it would at any rate be able to be seriously shaken by a force of that intensity. The aid, therefore, of some further mode of securing the principals is evident, as roofs of moderate, and even large spans, do not equal in weight the figures arrived at by observation for the maximum wind pressure. The strength required to be given to a roof will be most accurately calculated by a due attention to those principles which theory dictates, and practice sanctions, but its rigidity and stiffness will be best provided for by experience, combined with a little of that "artifice" which every thoroughly qualified engineer knows when and how to employ.

SALISBURY CHAPTER-HOUSE.

SIR,—Permit me to state that I ascertained last autumn that the decay of portions of the ornamental wall-painting, inside the Chapter-house of Salisbury Cathedral, is most certainly owing to the effects of damp. I was *told* that exposed parts of this ornamentation owe their permanence to the use of a backing of slate.

A. H. GENT.

LABOURERS' COTTAGES.

ARCHITECTS WHO KEEP THINGS TO THEMSELVES.

DECENT dwellings for farm labourers are being built on the Dudmaston Estates, near Bridgnorth, for the Rev. F. H. Wolryche Whitmore; at Caynham Court, Ludlow, for Sir Wm. Curtis, bart.; at Rowfant, Sussex, for Sir Curtis Lampson, bart.; at Jermyns, near Romsey, for Mr. R. G. Linzee; and at Kirby Muxloe, near Leicester, for Miss D'Oyly. These works are being carried out from the designs of Mr. Birch, architect, who gained the Society of Arts' premium for such designs. Each cottage will contain a living-room, three bedrooms, entrance-porch, scullery, pantry, fuel-store, piggery, privy, cesspit, and ashpit. Architects who are afraid of having their plans published may take a lesson from these cottages. When Mr. Birch obtained the premium, he gladly availed himself of our pages for the wide publication of his drawings. Another architect who was asked to afford facilities for the publication, about the same time, of his design for such cottages, was "not such a fool," he said, "as to give the public the benefit of his plan for nothing."

What was the result? Mr. Birch has been engaged all over the country carrying out the plans he had frankly thrown open, while the careful gentleman, who was "not such a fool," has never been heard of since.

NOTES ON THE INCLOSURE ACTS AND THEIR RESULTS.

A PAPER on this subject was read by Mr. Richard Hall, Vice-President, at the ordinary general meeting of the Institution of Surveyors, May 23rd. In concluding it, the reader said,—

From the sketch of the legislation on this important subject up to this point, it will be seen that Parliament has fully recognised the great advantage of inclosing wastes and unprofitable land, and removing any rights that interfere with its free cultivation. From time to time, however, provisions have been inserted in the various Acts, in order to preserve open spaces for the public, and for large populations. Village greens cannot be inclosed, and recreation grounds and allotments for the poor may be set out, if necessary, in the cases of inclosures of waste land. Any proposals for dealing with commons near London, or other large towns, have been regarded by Parliament with great jealousy, and in the year 1865 a Committee of the House of Commons reported on the best method of preserving to the public open spaces in and around the metropolis.

Their attention was directed to the question of the inclosure of portions of commons by "approvement." This process is authorised by an old Act of Parliament, passed in the reign of Henry III.,—20 Henry III., cap. 4,—and known as the Statute of Merton. It was intended to enable the lords of manors to inclose (probably

for the purpose of improvement or cultivation) such portions of the waste as were in excess of the requirements of the commoners. The Committee recommended, amongst other things, that this statute should be repealed; at all events, so far as suburban commons were concerned.

In the following session, 1866, an Act was passed for the purpose of preventing the inclosure of commons, under the Inclosure Acts, within the metropolitan police district, 29 & 30 Vict., cap. 122. This measure also provides machinery to enable persons interested in such commons to apply to the commissioners to prepare schemes for their management, which, after the observance of certain forms, are to be submitted for Parliamentary sanction. By the commissioners' report this year, it appears that applications have been made to them in eight cases, but no scheme has yet been completed.

In the present session, a Bill has been introduced to extend the provisions of the Act of 1866 to commons within certain distances of towns containing 5,000 inhabitants and upwards.

Last year, a committee reported on the subject of the public recreation grounds and allotment gardens, set out under the Inclosure Acts, and suggested some alterations in those Acts, with a view to enlarging the powers of the commissioners. This session, the Government has introduced a Bill, proposing that as much as one-tenth part of the whole value of any waste land shall be appropriated for those purposes; and giving the commissioners power to reserve a recreation allotment in the cases of common field inclosures, if the public have been in the habit of using any portion of the land to be dealt with for such a purpose. Common fields have hitherto been exempt from this condition. Rides and drives for the public may also be set out, and the assent of the local authority is required before any land can be enclosed within certain specified distances of towns containing 2,500 inhabitants and upwards. . . . .

The beneficial effects which have resulted from inclosures can hardly be estimated too highly. In the cases of common fields the removal of the complicated rights and customs, which so much interfered with their profitable cultivation, has increased their value in a very great degree; it has also enabled the owners to effect operations of improvement, such as drainage; and the new roads which have been constructed have not only benefited the land dealt with, but afforded improved communication for the public and the neighbourhood.

I have frequently had occasion to make valuations in parishes enclosed by my father thirty or forty years previously, and have found the value four or five times as great as it was at the time of the inclosure. But land is not only improved from an agricultural point of view; it is frequently converted into building sites; and some inclosures of common fields, which I carried out in the neighbourhood of Cheltenham, may be referred to as instances in which, probably, the value has been increased tenfold. I remember a small common field, property which was looked upon as of so little value that it was left quite uncultivated, and hardly possessed an owner; the process of inclosure soon changed its character, and since that time it has been built over.

The inclosures of waste lands have also exhibited very interesting results. At Framfield, Sussex, the quantity dealt with was 2,000 acres, and the lands in respect of which rights of common were exercised extended into seven parishes, and comprised some 12,000 acres. It was very generally thought in the neighbourhood, that the value of the whole of the waste would hardly suffice to pay the expenses. The results were, however, satisfactory; for the portions sold to defray the expenses did not exceed one-eighth of the whole. Some of the land was comparatively worthless; but the prices obtained averaged about 20*l.* an acre, which was but little less than the price at which inclosed land had been selling.

I will not, however, weary you with instances of the improvements which are so generally familiar to us. Many members of this Institution can, no doubt, call to mind various interesting cases. It is satisfactory that in no single case within my own experience has the cost been so great as to render the inclosure unprofitable.

In reviewing this brief sketch, it appears that the working of the Inclosure Acts, under the superintendence of the Inclosure Commissioners, has very successfully carried out the intentions of the Legislature. The cost of inclosures has, probably, been reduced by as much as 50 per cent.; and, at the same time, the process has been accelerated and rendered uniform and certain. The interests of the public, as well as those of the poor inhabitants, have received their share of attention; and the present legislation is apparently tending towards the encouragement of the inclosure of rural commons, whilst it seeks to preserve open spaces for the recreation of large populations.

THE NEW WORKHOUSE FOR DARLINGTON UNION.

THE local Board of Guardians, towards the close of 1867, offered premiums of 40*l.*, 30*l.*, and 20*l.* respectively, for the best three plans of a model workhouse. In response 116 designs were forwarded, and an architect from London examined them, and decided in favour of "Nota Bene" (Mr. C. G. Adams, of Stockton), "Economist" (Mr. G. Styans, of York), and "A" enclosed in a circle (Mr. W. Snowdon, jun., of Bishop Auckland). The Board decided to give the first premium to Mr. C. G. Adams, whose plans they accepted. Tenders for the contract were invited, and Mr. Joseph McCormick was announced to be the successful competitor, at 11,799*l.* The work has since progressed under the direction of the architect, and the supervision of Mr. W. Simpson, the clerk of the works appointed by the Board. It has now nearly approached completion.

The length of the front of the main building is 157 ft. 10 in. It has moulded brick bases and moulded brick stringing running along at the the height at which commence the springing to the arches, with a facia of black and white bricks placed alternately on each side of the central part of the building. In the centre is the principal doorway, with columns, bases, and carved capitals, moulded semicircular splayed arch, &c., and carved representations of animals. The whole front and returns of the main building are finished with a moulded blocked cornice. The roofs of the main building, and of the board-room, the porter's lodge, and receiving-wards are covered with Taylor's patent roofing tiles, and have the appearance of a gutter and ridge tile placed alternately. On the ground floor, at the east end of the main building, there is the master's room, 17 ft. 3 in. by 18 ft.; master's office, 18 ft. 6 in. by 18 ft.; infirm men's day-room, 20 ft. by 18 ft.; able men's day-room, 22 ft. 3 in. by 18 ft.; and two infirm men's night-rooms, one 30 ft. by 18 ft., and the other 20 ft. by 18 ft. Similar rooms are allotted to the able and infirm women, in the west end of the building. Separate hanging staircases, having iron balusters and hand-rails, lead to the men's and women's night-rooms. The main staircase is composed of wood, with cast-iron ornamented balusters, and mahogany hand-rail. This leads to the first floor, which is divided equally between men and women, similarly to the ground floor. On this floor is a staircase which leads up to the tower.

The infirmary, which is of considerable size, stands on the south side of the main building. It has a frontage of 77 ft. 10 in., and is 26 ft. in height. Attached to it are two wings, one at either end, which are each 49 ft. in length and 22 ft. 4 in. in height. All the walls and ceilings are plastered. The fever ward, which is also on the south side, is 85 ft. 4 in. in length, and 22 ft. 4 in. in depth. Attached to this building are a separate wash-house, laundry, and drying-room. The Board-room buildings comprise a porter's lodge, Board-room, receiving ward, vagrants' wards, clothes-rooms, drying closets, examining-rooms, with stone-breaking sheds, workshops, coroner's and dissecting room, and hearse-house, all one story high. The whole of the buildings are supplied with heating apparatus. Water-pipes are laid all round the building, with fire-plugs inside and out. The ground is laid out for the service of the different classes in the workhouse.

The new workhouse will accommodate 250 inmates and 50 vagrants, whilst the one at present occupied has only accommodation for about 135 inmates. The sub-contractors respectively were:—For joiners' work, Messrs. Gargett & Sons; for slating, Messrs. J. & G. Wharton; for plumbers' work, Mr. T. Johnson; for heating apparatus, Messrs. G. Clough & Co., Stockton; for donkey engine and boiler, Messrs. J. W. Lewes & Co., Middlesbrough; for stoves, kitchen-ranges, laundry fittings, J. Lear & Sons; and for laying out the ground, Mr. J. Prior. It is expected that the original contract price will be exceeded by about 400*l.* or 500*l.* for the additional works.

A new church is about to be built for St. Paul's district, and the first stone has been laid. The position chosen is a few yards further up Durham-road than where the present church stands, on the opposite side of the road. The total cost of the church, with tower and spire, is estimated at 4,100*l.* Of this about 3,350*l.* have already been raised, sufficient to meet the contract for the church, with tower and spire, but exclusive of paying for and laying out the enclosure of the land.

THE NEW OPERA-HOUSE, PARIS.

IN a former article on the French Mind we endeavoured to draw attention to the spirit of centralisation which is ever influencing the thoughts and actions of Frenchmen. We shall now try to show how the plans of French buildings are the organic outgrowths of that centralising spirit.

The new opera-house of Paris will suitably illustrate our meaning. A French playhouse postulates five requirements:—1. The Stage; 2. The Theatre Proper, comprising the pit, the boxes, the galleries, and the orchestra; 3. The Foyer or public promenade; 4. The Manager's Offices; 5. The Approaches.

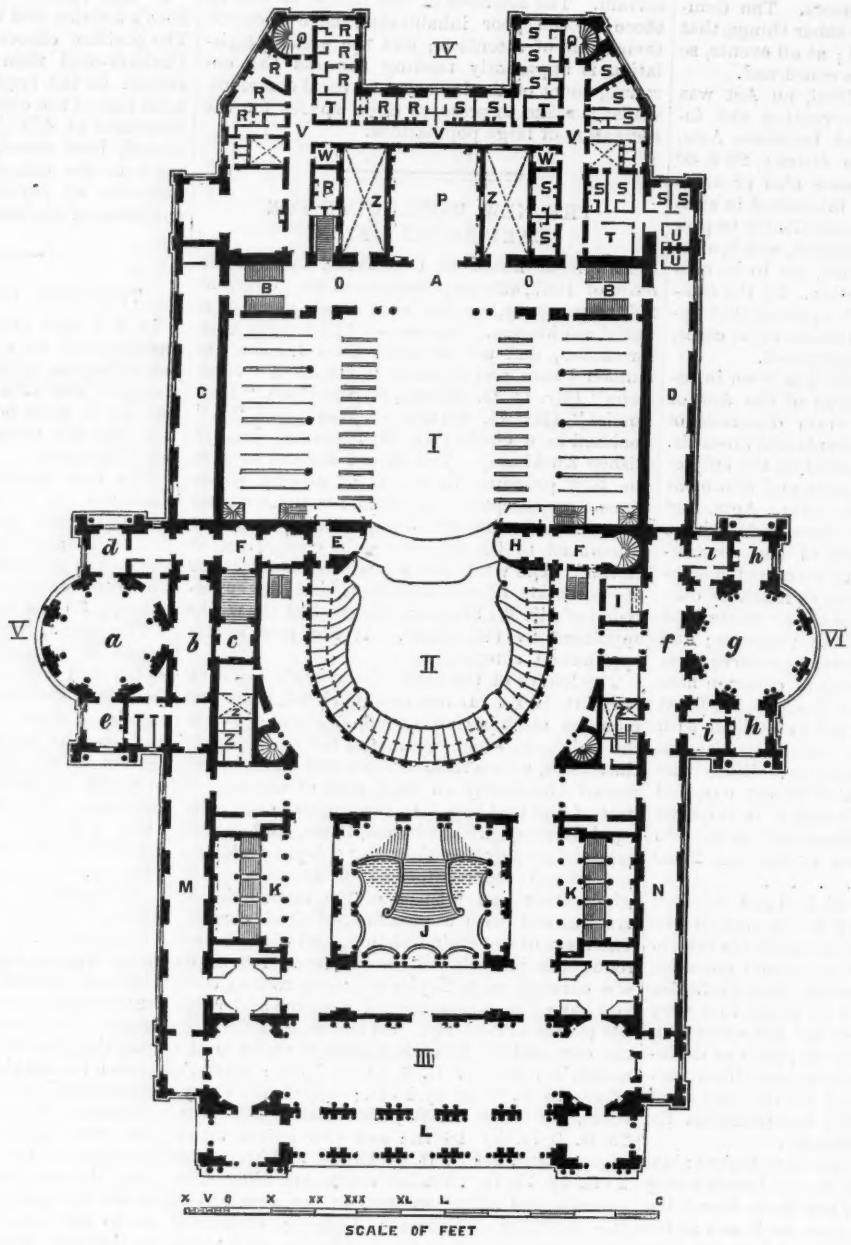
The puzzle, then, for the architect of a playhouse is to find a simple system of lines which will both satisfy the demands of the five main divisions of the house and the spectator's instinct of organic unity. If the architect be happy enough to hit upon such a system of simple and continuous lines, not only will he produce a practical and beautiful structure, but its erection will be easier to carry out, and will prove more solid than otherwise, because the walls, being in one line, can, so to say, be chained together.

M. Garnier's opera-house is an oblong rectangle, with projections or annexes in the middle of its long sides. Few geometrical figures are more regular and elegant. Roughly speaking, the house is not unlike a steamer balanced by her paddle-boxes. Two galleries run the whole length of the building on each side of it. These galleries, on account of their unbroken oneness, have a logical though unobtrusive beauty, which commends itself highly to the mind of a French architect. They form, indeed, a framework to the inner building, and thus bind up its five divisions in one majestic whole; ay, they shoot past the annexes so independently that they leave the spectator's understanding quite clear as to the subsidiary relation of these annexes to the main edifice.

In the opinion of French architects, such relations of parts must be distinctly legible in the general drift of the main lines of a building. Ay, more,—the French architect is not satisfied with impressing the cursory sight-seer with the purpose of every part, but he thinks he ought to plan every part, be it ever so subordinate to the main building and independent from it, so as to make that part neatly harmonise with the building by its leading lines and its position. In order to suggest the filiation of the annexes to the building, M. Garnier placed them symmetrically to the building's major axis, raising their principal walls in the prolongation of the principal walls of the house. By this simple system of lines the annexes seem to link arms with their parent erection, and thus the feeling of constructive unity is fully gratified.

But the question will be asked by Englishmen,—Is it always practical, is it always feasible to shape a part or a main division of a building to the requirements of geometrical unity? The Frenchman replies,—Certainly not; but the division of a building, which is most privileged to an eccentric individuality, *i.e.*, to an individuality, the outcome of necessity, is the *principal division*. Now, the principal division of a playhouse is the *stage*, because the stage, without which all the other portions of a theatre are meaningless, is, even when deprived of supplementary buildings, quite sufficient for histrionic purposes. Like the stage of a Punch and Judy show, the stage of a playhouse may be said to be the all-in-all of that playhouse. So the stage in M. Garnier's opera-house, occupies the whole breadth of the building, and is thus characterised by vast size rather than by special form.

Next in dignity to the stage is the Theatre Proper, with its pit, boxes, galleries, and orchestra. It fills the middle of the building, lies symmetrically to its major and minor axes, and



PLAN OF THE NEW OPERA-HOUSE, PARIS.——M. GARNIER, ARCHITECT.

is flanked by the annexes. Surrounding the theatre are corridors giving access to retiring-rooms, cloak-rooms, and other minor apartments. The theatre and its adjuncts have a oneness of their own, for they are unified by a rectangular framework, consisting of the stage wall, the two inner walls of the building, and the northern wall of the grand staircase.

The *escalier d'honneur*, as the grand staircase is called, is a building complete in itself, placed under a splendid rectangular dome, and surrounded by a broad and imposing rectangular gallery. This gallery is meant to impress the visitor with the official grandeur of the staircase, on the right and left of which branch out smaller stairs to the upper stories of the theatre. In order to give an overwhelming significance to the *escalier d'honneur*, the architect has not used all the intramural space available for the smaller stairs, but he has deliberately narrowed them by lining them with closets. The same device of optical contrast has been resorted to in order to bring out the importance of the foyer, with respect to its auxiliaries, the open loggia, and the vestibule. Both the loggia and the vestibule are cunningly shortened by the architect, so that they seem to the looker-on as the mere humble servants of the foyer.

The annexes require little explanation; they speak for themselves. The refreshment-room annex is planned for the purpose of free circulation: it is therefore roomy and simple. The Emperor's annex is, on the contrary, more elaborate, being constructed to meet all the exigences of the court during their visits to the opera.

For the manager's offices and the accommodation of the actors and dancers, a large portion of the building has been set apart in the rear of the stage. The object in view was to secure a quick and easy circulation,—a difficulty masterly solved by the double T passage, along the west side of which are the actresses' retiring-rooms, and along the east side of which are the actors' rooms. A glance at the plan will convince the reader that the compartments of the manager's offices have been most logically adapted to their several purposes.

If the reader, after a general acquaintance with the main divisions of the new opera-house, considers its plan as a whole, he cannot fail being struck with the sequential simplicity, the calm, clear, and practical beauty of its composition. Like Phidias with the Parthenon, M. Garnier, in the plan of his opera-house, has produced the maximum of effect with the minimum of means. Great art not only bids us wonder, but bids us wonder at our wonder. When we consider the masterpieces of painting, sculpture, and architecture, we marvel at being moved by their apparently effortless simplicity. But it cannot be too loudly asserted that in architecture, as in other arts, the grace of simplicity is only vouchsafed to the systematically schooled student; and that taste, like the human heart, wants chastening, in order to prove honest and pure.*

LAWRENCE HARVEY.

École des Beaux Arts, Paris.

* A view of the entrance-front of the building will be found in our volume for 1867, p. 749.

REFERENCE TO PLAN.

I. *The Stage.*

A. Vestibule for the general management of the house.
B. Stairs for working staff.
C. Depôt for theatrical implements.
D. Boxes of male choristers.

II. *The Theatre Proper.*

E. Imperial box.
F. Vestibule of approach.
G. Courts for ventilation and lighting.
H. Boxes of Imperial Family.
I. Dressing-rooms.
J. Grand staircase.
K. Minor staircase.

III. *Public Promenade.*

L. Open loggia.
M. Smoking-gallery.
N. Coffee-gallery.

IV. *Manager's House.*

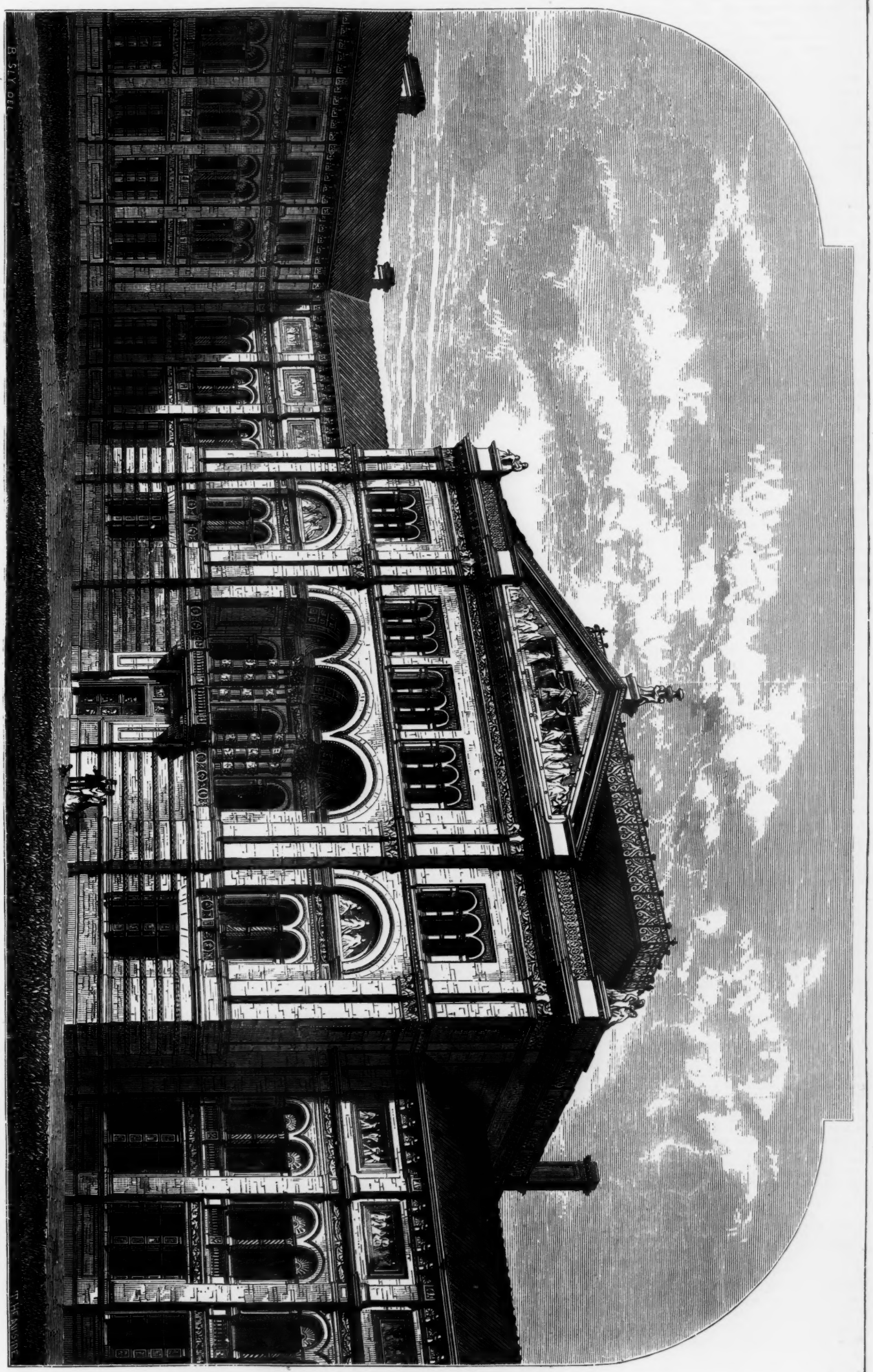
O. Promenade for the singers.
P. Promenade for the dancers.
Q. Stairs for manager's working staff.
R. Boxes for leading female singers.
S. Boxes for leading male singers.
T. Dress depôt.
U. Boxes for choregraphers.
V. Connecting gallery.
W. Hairdressers' room.
X. Retiring-room of the chorus leaders and trainers.
Z. Area for ventilation.

V. *Emperor's Pavilion.*

a. Grand Imperial saloon.
b. Grand vestibule of approach.
c. Imperial staircase.
d. Empress's saloon.
e. Emperor's private apartment.

VI. *The Restaurant Pavilion.*

f. Ice-house vestibule.
g. Ice restaurant.
h. Retiring and waiting room.
i. Restaurant's kitchen.
k. Stairs for working staff.



SOUTH KENSINGTON MUSEUM: CENTRAL PORTION.—DESIGNED BY THE LATE CAPTAIN FOWKE, R.E.

LECTURE THEATRE BUILDINGS AT SOUTH KENSINGTON.

OUR illustration this week represents the façade of the new Lecture Theatre and Refreshment-rooms, which form the north side of the internal quadrangle of the Museum at South Kensington. The materials employed are mainly red brick with dressings, and enrichments of terra-cotta. The chief feature of the design is a deeply-recessed arcade on the principal floor, the arches being supported on columns of terra-cotta, modelled by the late Godfrey Sykes. The soffits of the arches are filled with white majolica, manufactured by Messrs. Minton & Co., of Stoke-upon-Trent. Figures holding shields of the same material are also introduced in the spandrels on either side of the circular panels in the arched recesses, and in the square panels above the door. The three circular panels just alluded to, are filled with glass mosaics, by Messrs. Salviati, Rust, & Simpson. The figures, which represent History, Poetry, and Alchemy, are executed in coloured tessera, upon a gold background.

The door, which forms the central feature of the lower story, is in six panels, with figures of Newton, Davy, Bramante, Michelangelo, Watt, and Titian. It may be remembered that this bronze door attracted a great deal of notice in the Paris Exhibition. It has since been richly gilt. The brickwork of the ground-floor is banded with four courses of moulded bricks, the intermediate portions being rubbed and gauged. The arch-heads of the large openings to the right and left of the central building, are filled with lunettes in mosaic-work. These mosaics were executed in the South Kensington Museum by the female students, the materials being supplied by Messrs. Minton, Hollins, & Co. The rectangular panels in the upper portions of the wings, and the large picture which occupies the tympanum of the pediment, were carried out in the same way. The upper story of the theatre building consists of a series of triple arches placed in square-headed recesses, the spandrels above the arches being filled with a diaper of red terra-cotta. The subject of the design in the pediment is the Exhibition of 1851. Four allegorical figures, representing the four quarters of the globe, receive from Queen Victoria wreaths and rewards, while natives of the different countries bring their manufactures and produce to the Exhibition. In the background is the building. The figures are executed in buff tissue, the Exhibition being black, and the groundwork of the whole gold. On the pedestals at the corners of the building will be colossal groups in terra-cotta, designed by Mr. Bale, a student of the Lambeth School of Art. One of these figures, manufactured by Messrs. Doulton, is already on the ground. The summit of the roof is surrounded by a perforated screen of cast iron, supplied by Messrs. Hart & Son. The terra-cotta for the buildings was furnished by Blanchard, of Blackfriars-road, with the exception of the frames of the square panels, which were made by Millichamp, of Lambeth. Mr. Cawte, of Fareham, supplied the bricks; Messrs. Smith & Taylor were the builders; and, since the death of Captain Fowke, Lieut.-Col. Scott, R.E., has been the Director of Works.

ARCHITECTS' RIGHTS AND CHARGES.

THE DRAWINGS OF THE HOUSES OF PARLIAMENT.

SIR,—Mr. E. M. Barry's case is likely to go round the artistic world as one of extreme hardship to Mr. Barry himself, and of reproach to be hereafter attached to Mr. Ayrton's name. It is a constant and, in principle, a reasonable claim set forth by political rulers that they should be allowed to complete their measures before they are judged and turned out. Why not adhere to the same rule with regard to artistical works and men? We, in Canada, had a case of a similar nature to that of Mr. Barry, in the matter of the Ottawa Government Departmental Buildings. But the works had then so far progressed as not to suffer much by a change of architects; and this satisfaction was offered the profession in Canada, that a *sacrifice* was necessary! However, the architects, who were employed under commission, were not asked for any more drawings and details than had already been executed at the actual stage of the works. Would the lordly British Government be less magnanimous than a Colonial?

Englishmen should certainly look to it as a blessing that the chain of tradition was not broken until the present day in the building of the Houses of Parliament, the son succeeding the father in the carrying out of the works—a boon which was not always offered by Providence in many other national piles which, as artists have often an occasion to regret, lack unity of conception and execution, causing sometimes a puzzle to the archæologist and a sore to the connoisseur.

If we approach the question of economy which might have actuated Mr. Ayrton, we have here, by induction, another example of people ruining themselves through avarice. Artists will not grow on poor feed; and where is the man of talent who, in this age, would consent to seal his fate by condemning himself to drawing on the board, and selling his productions as articles of commerce?

I herewith inclose a copy of the schedule of charges, &c., followed by architects practising in Montreal, and, I may say, through the whole Dominion. It will go as another piece of evidence that any one entering our profession is made aware of his liabilities, and is expected to meet a certain treatment as a reward for his studies and labour, neither more nor less.

We, on this side of the Atlantic, earnestly hope that the Barry embroglio will be so adjusted as to accord with the rules universally adopted by the profession in England, Germany, France, and America.

Professional Charges of Architects practising in Montreal.

	Per Cent.
1. Public buildings and private residences, commission on the cost thereof of	5
2. Block of two houses of similar design, commission on the cost thereof of	4
3. Block of three, four, or five houses of similar design, commission on the cost thereof of	3
4. Block of six or more houses of similar design, commission on the cost thereof of	2½
5. Stores and warehouses, commission on the cost thereof of	4
6. Block of two stores or warehouses of similar design, commission on the cost thereof of	3
7. Block of three or more stores or warehouses of similar design, commission on the cost thereof of	2½
8. Items of charge comprised in 5 per cent. commission:—Preliminary sketches, working drawings and specifications sufficient for an estimate or contract	2½
Detailed drawings	1
General superintendence (exclusive of clerk of the works), examining and passing the accounts, exclusive of measuring and making out extras and omissions	1½
9. N.B.—The foregoing subdivision of charges to apply proportionately to stores, warehouses, &c.	
10. For works in alteration of premises, the remuneration to be increased according to the time, skill, and trouble involved.	
11. Taking out quantities from plans for a detailed estimate, commission on the amount thereof of	1½
12. Measuring and valuing artificers' work done for any amount under 1,000 dollars	2
Over 1,000 dols. and under 4,000 dols.	1½
Over 4,000 dollars	1½
13. For services by time at per day	10 dols.
14. N.B—All travelling expenses to be charged extra.	
15. No charge to be made for a rough estimate obtained by cubing out the contents. If a detailed estimate be requested by the proprietor, a charge therefor is to be made as above.	
16. An architect is bound, under the full percentage charge, to provide one set of drawings and one set of tracings, with duplicate specifications; it being understood that the architect is paid for the use only of the drawings and specifications, and that these, in the event of carrying out the works to completion, are to remain his property.	

The above was agreed on in February, 1865, and from the last clause (16th) it will be seen that Mr. Ayrton's claims as to the ownership of the drawings of the English Houses of Parliament would, in Canada, be resisted by the architect. A. LÉVÊQUE.

Montreal.

THE COLUMNS IN ST. SWITHIN'S, LINCOLN.

SIR,—I will not attempt to follow the quotation from the *Lincoln Gazette*, which appeared in your last issue, but simply give you a few facts. The pillars of the nave arcades are of Ancaster stone, 2 ft. diameter, of alternately circular and octagonal section, containing an area in the circular ones, the smallest, of 453·009 in. The weight of the clearstory and roof on each pillar I estimate at 60 tons, or 2·649 cwt. per inch of area. Mr. Huddlestone, a local builder of some considerable experience, and a member of the committee, states that there are about 40 tons of walling on each on the north side, and 38 tons on the south side. To this must be added the weight of the roof,—not 20 tons per pillar, certainly,—so that my estimate is in excess of his. Now, if published tests of the quality of stone are worth anything, and it is upon these only that architects can depend in calculating for weights, &c., I give you the following:—In the experiments made by Messrs. Poole & Son, in October, 1864, on Bath stone, it was shown that a weight of about 80 tons might be considered safe per foot, some not showing damage until upwards of 120 tons per foot. The report of the Royal Commission states the cohesive power of Bath (Box) stone at 5·313 cwt., and of Ancaster at 8·349 cwt.; and if Bath will carry 80 tons, Ancaster should carry 128 tons; or these pillars, of 3⅛ ft. area, should carry 405 tons; and a stone of which the cohesive,—not the crushing,—power is 8.349 cwt., ought not to crush with a weight of 2·649 cwt.

In some experiments made by Messrs. Poole, also, on Ancaster stone, the crushing weight for these columns would be 391 tons, 12 cwt. 16 lb.

In some made by Mr. Lindley, the owner of the Mansfield Quarries, the crushing weight of Ancaster stone is given as 18·33 cwt. per inch, or about seven times the weight on each of these pillars, viz., 415 tons. JAS. FOWLER.

WATERING STREETS.

YOUR correspondent who inquires a better way of watering streets than by horse and cart, such as hose and jet, &c., will find the information he requires in some recent numbers of the *Gardeners' Chronicle*. It is there stated that the Local Board of Health of Reading has used the hose and wheel apparatus for many years, and is quite satisfied with its working. Those in use there are larger than those used in Paris, but are similar in other respects. A somewhat similar plan was followed in Oxford fourteen or fifteen years ago. It is very cheap; and the simplest form is gas-piping in 12-ft. lengths, put upon small cast-iron wheels, and united by india-rubber hose. Messrs. C. Hart & Sons, of 13, Gun-street, Reading, would give any further information. S.

DESTRUCTION OF A MASTERPIECE OF ART.

MOST of our readers will remember the richly-mounted and jewelled human skull, taken from the summer palace of the Emperor of China, and exhibited, under the department of Goldsmith's Work and Jewelry, in the Chinese Court of the Great Exhibition of 1862. It was then in the possession of Mr. P. M. Tait, and the price put upon it was one thousand guineas. It stood upon a triangular stand of pure gold, resting on three roughly-shaped heads of solid gold. The cover was also of pure gold, richly ornamented with minute patterns in low relief, and studded with small precious stones.* Good judges have spoken of it as the most remarkable specimen of Oriental goldsmith's work ever seen. This extraordinary piece of work has now been *melted down* for the mere value of the metal, and thus one of the most precious relics of Chinese art and history is irretrievably lost. Nothing remains but the upper part of the naked skull (which has been supposed to be that of Confucius!), and which was left uncared for at the house of a Jewish gold-dealer in *Houndsditch!*

THE KENSINGTON ROAD.

SIR,—"Quondam," in his communication to you of last week, says that the slip proposed to be taken from Hyde Park, is in length 500 yards, by a width of 25 yards. He is wrong in the last measure; it should be feet, not yards, and it is only 25 feet in one small part of the length. The average width is very much less: 75 ft. would cause the lodge, just erected, in front of the Exhibition-road, and that at Queen's Gate, together with the iron gates and rails there to be removed. The erection at Queen's Gate cost the builder on the Harrington and Alexandra estates nearly 3,000*l.* The line proposed, however, passes in front of them. The trees might be preserved according to "Quondam's" idea, by putting the road-path within them. It would almost do everything that was required, to give a good approach to the Hall of Science.

A mistake is made by parties who propose that the statue of the Prince Consort, in the monument, should be turned with its face to the park, in order that it might be towards the site of the Exhibition of 1851. It would be nothing of the kind. The first glass palace stood far away towards Hyde Park-corner; and the statue, if placed in the position proposed, would front towards what has always been vacant land, and have its back to the real valuable creation of the revered Prince Consort, the splendid Museum of Arts and Science, the Hall of Science, and the other buildings devoted to a national purpose, that will undoubtedly in a few years be erected there. C. J. R.

* Readers will find it figured in Mr. Waring's "Masterpieces of Industrial Art," vol. iii., p. 201.

PIRATING A ROTHERHAM FIRM'S DESIGN.

A CASE of some importance has come before the borough justices at Wakefield. Mr. Samuel Nichol, iron founder, Vicarage-street, Wakefield, was charged with infringing a new, original, and patent design for an oven-door, the property of Messrs. Hatterseley Brothers & Co., iron-founders, Queen's Foundry, Swinton, near Rotherham. An agent to the prosecutor gave evidence as to the purchase of stoves, with an oven-door, identical with the prosecutor's in form. In his opinion the door had been cast from the prosecutor's casting. The prosecutor's trade-mark, however, did not appear upon the defendant's door. The defendant's son was then called, and he said that since they got the summons they had destroyed all their models, which corresponded with those belonging to the prosecutors. Other evidence having been given, the Bench fined the defendant 5*l.*, and ordered him to pay the costs, which amounted to 2*l.* 10s. Mr. Wainwright said he had received instructions to prosecute all offenders.

"AN ARCHITECT'S BILL."

LINCOLNSHIRE AND NOTTINGHAMSHIRE UNION SCHOOLS.

SIR,—Neither Mr. Peck nor his solicitors have mended matters by publishing an explanation of this bill. The main facts, as described in your Journal, remain uncontradicted; but as Messrs. Monckton & Co. have given the particulars, it enables even a countryman to criticise it. The first item is—Commission on 13,300*l.*, being estimate of expenditure, 666*l.* 10s. There are only two errors in these figures, viz., the estimate procured for carrying out the works amounted to 12,340*l.*, and upon this actual sum (not an assumed estimate of the architects), is the commission payable; and as the works were not carried out, Mr. Peck neither superintended the works nor made out any builders' accounts, and therefore, by the rules of the Institute of British Architects, and the invariable practice of architects in London, and even in the country, he is only entitled to charge 3 per cent., instead of 5 per cent., or 370*l.*, instead of 666*l.* 10s.,—a difference of only 296*l.* 10s.

A BUMPKIN.

*** The correspondence must end here.—ED.

CURIOUS COINCIDENCES FOR OBSERVATION.

SIR,—When I ventured to point out in the *Builder** the expediency of making simultaneous observations upon the physical changes in a systematic form, I anticipated a record of magnetical and electrical effects, or their dynamic manifestations, from different expert scientific observers, so far as related to mundane interests in the various parts of the world, up to this time. However, in a relatively local point of view,—that is to say, in this country, the climate, or weather, during the past three months has been remarkable; and farmers and others who are interested in the climate observe the indications of the very small quantity of rain which has fallen of late, and for which no provision could be made by man to supply artificially.

Now, as I venture to anticipate that the compensation for the deficiency of rain will be, perhaps, suddenly made up, we may expect a kind of tropical supply of water in an inconveniently short space of time, so as to overtax the usual outlets and overflow the drains and sewers. The storm outfalls ought to be looked after at once. The sudden change will be sure to be attended with magnificent electrical phenomena, and impress its effects upon various objects: lightning conductors will be found quite the right thing just now as a salutary provision, if properly conducted into water.

With the exception of the physical commotion which took place on the 18th of March last, at Natal, South Africa, very few records of electrical or magnetic storms have been published.

It takes time to accumulate effects before the results reach the senses, and then mostly in a form to which we are accustomed and at once identify by a popular name.

I still urge the critical examination of the magnetic indications, with the ultimate view to trace the influence of the magnetism of the sun upon the inclination of the axis of the earth to the plane of its orbit, and the consequent influence upon climate during ages, and the simultaneous development *by selection* of various organised beings, adapted to such period, and fully identified by geologists.

ARTHUR GEARING.

ELECTRICITY IN THE DRAWING-ROOM.

A FRENCH story is told in a London journal, to the effect that the Empress of the French (it would seem to be) had received an electric shock on going to a mantelpiece before which lay a bear-skin on the floor; and that when the Emperor did so, "a fine jet of bluish fire was seen to pass from the marble to his clothes." The story, we confess, looks rather apocryphal in the way it is put; but it reminds us that in some recent electric experiments, Sir C. Wheatstone has ascertained that the mere shuffling of the feet along a carpet will charge the human body with electricity sufficient to indicate itself by means of a delicate electrometer which he used; nay, that the electric charge resulting from a single stamp of a foot is thus recognisable. And this gives some countenance to the strange story from America, that not only do people thus charge themselves electrically, for private amusement, but that they can set fire to gas with the tips of the fingers when so charged. In America, at all events, it is well known that electricity occasionally manifests itself far more strongly than with us; and this has been attributed to the moisture of our climate on the one hand, and the dryness of the American on the other. Perhaps the continental extent of the ground in America, has something also to do with the state of electricity there; and, it may be, with the gradual and peculiar change in the physical characteristics of the people, as originally immigrants mainly from this country.

* See p. 231, *ante*.

GRANTHAM NEW TOWNHALL.

THE new building consists of a porch, spacious entrance-hall, 30 ft. by 19 ft. 6 in.; on the left hand of which is a subscription news-room, 30 ft. by 19 ft. 6 in., with a W.C. and lavatory adjoining; and on the right hand is the borough surveyor's office and muniment-room, behind which is the townhall kitchen. Immediately behind the entrance-hall and staircase is placed the sessions hall, which is 50 ft. by 30 ft. and 26 ft. high. This hall is fitted up with ornamental pierced panelled work, having a raised dais or platform at one end for the magistrates, the centre of which is occupied with a canopy-headed seat for the mayor. Behind this platform is the private entrance for the magistrates, and a private retiring-room, W.C., and lavatory, and also a petty jury retiring-room; the latter is approached from a separate entrance almost immediately from the jury-box. The arrangements for the grand jury, clerk of the peace, the pleaders, witnesses, prisoners, and the public in this hall, appear to have given great satisfaction. On the right hand of the main building, and abutting against it, is placed the borough police station, which consists of the superintendent's residence and four police cells, fitted up with every convenience, and warmed by means of hot water.

The residence of the superintendent, in whose care the buildings are entrusted, has direct communication with the townhall proper.

The prison is placed immediately behind the sessions-hall, and consists of twenty-four cells eighteen of which are for males, and the remainder for females. The governor's residence is placed at one end of the prison.

The upper floor of the townhall is approached from the entrance-hall by a spacious staircase, 6 ft. 6 in. wide, the height of which is divided into three flights, having spacious landings between each. From the second landing, right and left, are placed the grand jury-room and witness-in-waiting-room. From the former a door leads directly into the grand jury-gallery of the sessions-hall. These rooms are also intended to be used as retiring-rooms to the large assembly-room when required.

The assembly-room occupies the entire front of the main building, is 60 ft. by 30 ft., and 21 ft. high, and is capable of dining with comfort about 200 persons. The ceiling of this room is divided into nine panels, three in length and three in width, the beams dividing them being left perfectly plain, thus giving apparent strength to the constructive features of the ceiling. Ornamental cornices are fixed round the inside of each panel, that portion of it on the ceiling being pierced through for ventilation. The decorations consist of carved plaster work in the Renaissance style of architecture.

The front buildings next St. Peter's-hill are built with Messrs. Platt's patent dry-pressed red bricks, from Oldham, in Lancashire, with Ancaster stone dressings, except the columns of the front entrance porch, which are of red Mansfield stone. The stone arches to the windows, and the archways of the porch, have moulded panels inlaid with Lizard serpentine polished marble. The entrance-hall floor is laid with Maw & Co.'s encaustic tiles.

The cost of the prison and governor's residence was nearly 3,000*l.*; and when we consider that there are in addition thereto separate houses for the chief warder, superintendent of police, and four cottages for policemen, making no less than seven separate houses, likewise police-station, offices for fire-brigade, and sessions hall, it will be seen that from a little over 8,000*l.* a very small sum could have remained for the town-hall proper.

Mr. W. Watkins, of Lincoln, was the architect; and Mr. Wartnaby, of Grantham, the contractor.

The India Museum.—In future this museum will be opened on Saturdays until eight o'clock p.m.

CHURCH-BUILDING NEWS.

Tonge.—St. Michael's Church, Tonge, has been renovated in its internal fittings and arrangements, from the designs and under the superintendence of Mr. H. Cockbain, architect, Middleton, near Manchester. The old high-backed pews have been removed, and open benches substituted, with reclining seats and backs, and the walls of the nave have been wainscoted with portions of the old woodwork. The arrangement of the chancel and choir has been materially altered. A portion of the nave floor in front of the chancel has been raised two steps, and will accommodate the clergy and choristers. Above this, the floor of the chancel has been raised three steps. The walls and ceiling of the chancel have been painted and decorated with bands, powdering, diaper, and other designs in colours. These decorations have been executed gratuitously by Mr. John Deane. The wainscot on the east wall of the chancel is, like the other woodwork, of pitch-pine. Other alterations and improvements have been effected. The contractors were Messrs. Welling, Brothers, of Middleton. The ironwork was by Messrs Thomason & Co., of Birmingham and Manchester.

Thorndon.—The Church of Thorndon, near Eye, is about to be restored. The work contemplated includes refacing the walls, the removal of the old carved pulpit and reading-desk nearer the chancel, rebenching the nave, the removal of the gallery, and throwing open the west window, now for the most part blocked up by it. By lengthening the benches, narrowing the passage, and seating that part under the present gallery, the number of sittings will be increased and the interior of the church improved. The walls are continued from end to end without a break, the chancel being only distinguished from the rest of the church by the steps which lead to it, and in the roof by a projecting rib springing from carved corbels. Mr. Phipson is the architect employed, and Mr. Grimwood, of Weybread, the contractor. The contract is for 377*l.*

Cheadle.—The chancel of the parish church of Caverswall, which is interesting as containing some curious inscriptions on mural monuments, and also Chantrey's monument to the late Countess of St. Vincent, has been restored at the expense of the patron of the benefice, the Hon. E. S. Parker Jervis. The work has been carried out by Mr. S. Mear, of Longton, builder. Everything has been done without the aid of an architect.

Oundle.—Bulwick Church, Northamptonshire, is undergoing a necessary restoration. The edifice has been placed in the hands of Messrs. Slater & Carpenter, of London, architects, and Messrs. Halliday & Cave, of Greetham, Rutland, contractors. The provisions made for carrying out the restoration have been agreed upon, Mr. T. Tyron, the lord of the manor, offering to heat the church and erect the family seats; the other portion of the expense to be borne by the incumbent, and a rate leviable on the parish.

Great Waltham.—The foundation-stone of a new church has been laid at Forth-end, near Great Waltham, by Mrs. Tufnell, of Langley's Park. The district assigned to it is the northern portion of the large and scattered parish of Great Waltham. An eligible site of four acres for the church and for a parsonage-house, which is also to be erected, has been given by Mr. J. J. Tufnell, who has likewise contributed towards the building of the fabric and the residence. The new church, which is to be dedicated to St. John the Evangelist, will be built in accordance with plans which have been prepared by Mr. Chancellor, of Chelmsford. It will consist of a nave of about 60 ft. long by 22 ft., a south aisle the same length and about 10 ft. wide, and a chancel with octagonal end 27 ft. 6 in. long by 19 ft. wide, providing accommodation in all for about 285 persons. At the east end of the aisle there will be a tower, the ground floor of which will serve as a vestry, and the south doorway of the aisle will be protected by a porch. The walls of the building throughout will be faced with red bricks, inside and outside, relieved by bands of pressed bricks and stone. The windows in every part of the church will have moulded brick jambs and arches with plate tracery. The arcade separating the aisle from the nave will have stone columns with moulded brick arches. The roofs of the nave and aisle will be open timbered. The tower will be 50 ft. in height from nave floor to eave of spire, and the spire will be 20 ft. high. The porch will be of oak,

open timbered with arcaded sides. The church will be fitted internally with open benches, and the gangways will be paved with tiles. It is proposed to heat the church with hot water. The cost of the building will amount to something like 2,550*l*.

Southborough.—The foundation-stone of a new church has been laid on the New Building Ground, Southborough. The funds at present will only admit of a portion of the church being built. There will be a chancel and two transepts, and the church will be built in the early Gothic style, of local stone, with Bath stone dressings. It will be lined internally with red bricks, and will have an open-timbered roof covered with tiles. The church is to hold about 300 people, and is to be completed, at a cost of about 1,800*l*., by Messrs. Willicombe & Oakley, the architect being Mr. Theodore H. Green.

Preston (Lancashire). — Emmanuel Church, Preston, has been consecrated by the Bishop of Manchester. It is built of brick, with strings and bands of coloured and moulded bricks and stone dressings. The style of architecture is Geometrical Gothic. The plan is cruciform, and the ground floor accommodates 632 adults, 150 in the west gallery, and 92 in each transept gallery. There are four entrances to the church, viz., the tower doorway, the double doorways at the west end, and one to each transept which answers for the galleries. The entrances are so arranged by double doors that everything in the shape of draught is obviated. The west entrance is approached by a porch projecting about 7 ft., which is surmounted by an ornamental carved stone cornice, and a neat balcony with trefoil and quatrefoil perforations having large carved leaves at the angles. Over the archway in front of each door is a gablet, with panels underneath left for carving some appropriate subject. The organ-chamber and vestry are on the south side, on the north side of the chancel. The tower of the church is at the south-west corner: it is 12 ft. square inside. The nave is lighted by two and three light windows on the north and south sides, filled with plate tracery. The transepts are lighted on the west by two single lights, and at the ends with three single lights, having a large one over. The chancel has a five-light, and the west end of the nave a four-light. The roofs throughout are open timber of pitch pine, and are boarded diagonally. The extreme length from east to west is 125 ft.; breadth over transepts, 86 ft.; breadth of nave, 40 ft.; chancel, 20 ft.; transepts, 25 ft. 6 in.; length of nave, including vestibule, 86 ft. 6 in.; chancel, 27 ft.; organ-chamber, 13 ft. by 11 ft.; height of nave from floor to ridge, 45 ft.; height of tower to top of pinnacles, 100 ft. The architects of the edifice, its furniture, and fittings, were Messrs. Myres, Veevers, & Myres, of Preston. Mr. John Pownall was clerk of works; and Mr. John Bamber, builder. The gasfittings and lectern were provided by Mr. John Whitehead; heating apparatus by Mr. Seward; and the decorations by Messrs. Park & Co., all of this town.

Keele, Staffordshire.—The new Church of St. John the Baptist, built at the sole cost of Mr. Ralph Sneyd, of Keele Hall, the patron of the living and owner of the parish, has been opened for divine service. The church has been erected from the designs of Mr. T. Lewis, of Newcastle, architect, under whose superintendence the works have been carried out to completion. The rebuilding was commenced in the spring of 1868. The new edifice will seat 280 adults and 100 children, and consists of a chancel, 32 ft. by 18 ft., with a vestry on the north side thereof; chancel aisles, each 12 ft. 6 in. by 12 ft. 6 in.; nave, 60 ft. by 21 ft.; north and south aisles, each 47 ft. by 10 ft.; and a tower, 16 ft. square at the west end of the south aisle, with a spire, the total height of which is 128 ft. from the ground level to the top of the metal finial. The principal entrances are by porches at the west end and on the south side. The building is of the Decorated period of Gothic architecture. The external walls are 2 ft. 3 in. thick, built with rock-faced native stone (of a pale red colour), and Hollington stone dressings outside; and inside the walls are lined with Weston stone, part of which formed the outside walling of the old church, the piers, arches, and general dressings being of Hollington stone. The nave has an arcading of four arches on each side, with octagonal piers supporting a clear-story, and with a moulded arch between the nave and chancel, with smaller arches to the chancel aisles. In the course of the excavations for the foundations, two recumbent figures in alabaster were found. These were recognised as having formed the effigies from an altar tomb, which had been in the former church as a monument of the Sneyd family. These and the tomb have been restored, and placed in a recess prepared for them on the north side of the chancel. Against the east wall of the chancel is an arcaded reredos formed of Hollington stone, with columns of griotti marble and panels of Minton's mosaic tiles; the floor of the chancel and altar platform are laid with Minton's tiles. The font is of Hollington stone, the upper part having carved panels and appropriate inscription, and supported by an octagonal base with griotti marble columns. The roofs are of high pitch, and covered with green Westmoreland slates, those of the nave and aisles being of red deal, stained, and the plaster between the rafters tinted blue. The chancel and chancel aisle roofs are panelled in oak, and the main ribs of the former are supported by carved oak figures supporting shields. All the seats, pulpit, desk, communion-table, and other fittings are in oak. All the windows are glazed with cathedral glass, having a narrow border of clear glass round each light; the glass in the east and west windows is only common glass at present, but is intended shortly to be replaced with stained glass. The church is warmed by Haden & Son, of Trowbridge. The six bells, which were formerly in the old tower, have been tuned, refitted, and rehung in the new tower, by Messrs. Mears & Stainbank, of London, and were rung at the opening services. One of these bells has the inscription, "God save the King, 1647," cast upon it.

DISSENTING CHURCH BUILDING NEWS.

Derby. — The new Congregational chapel, Derwent-street, has been opened. It is planned to seat 350 persons, and is of sufficient height to admit of the addition of side galleries, for the insertion of which and the extension of the end gallery provision is made. By these means the accommodation may be increased to 500. An organ-gallery occupies a recess behind the pulpit, and beneath is a vestry. The site provides ample room for commodious schools, which it is proposed to erect at a future time. The style of architecture adopted is Gothic of the fourteenth century. The front next Derwent-street has a four-light traceried window in the centre gable, and an arched doorway underneath, the arch being moulded and supported on stone shafts with carved capitals. Staircase wings flank the front gable on either side, that on the south side being grouped with an octagon spirelet, 60 ft. high. The work has been executed by Mr. Stoddard, of Derby, the contract price being 1,258*l*. Mr. Tait, of Leicester, is the architect.——The Green-hill Wesleyan Chapel has been re-opened after undergoing extensive alterations. The ceiling has been raised and thrown into moulded panels; the windows, of which there are six on each side, are new; the square windows in the gallery are superseded by circular headed ones. New vestries have been added, the roof has been re-slated, and the old front has been replaced by an elevation in the Italian style. Mr. John Gadsby has carried out the work. The late Mr. Woolhouse was the contractor for the plumbing. The decorations were by Mr. Basford. The alterations and improvements have been made under the superintendence of Messrs. Giles & Brookhouse, architects. The cost of the improvements will be something like 1,000*l*.

Cambridge.—The memorial stone of a new Wesleyan chapel has been laid in Hills-road, Cambridge. The chapel and minister's house are to cost 4,600*l*., and the funds still needed to complete the work are 2,000*l*. The chapel is first being proceeded with. The design is Early Gothic. The chapel is set back some 20 yards from the road. In the basement there are arranged a schoolroom, 42 ft. by 33 ft., three class-rooms, of good sizes, kitchen and heating-apparatus room. On the ground-floor plan there will be inner and outer lobbies to the chapel. The sittings on the ground-floor will accommodate 340; those in the gallery will accommodate 200 adults and 100 children, and the organ-gallery 10 adults. The gallery will be approached from both sides of the principal entrance by means of a staircase. At the back of the chapel, over the kitchen, will be a minister's vestry. On the left-hand of the principal entrance will rise an octagonal bell-turret, relieved at the top by an open octagonal canopy, the arrises of which are somewhat obliterated with carving and gurgoyles. The front gable is pierced by a triplet window, filled in with Geometrical tracery, having four lights in the centre and two at the sides. The whole of the windows in the chapel will be glazed with cathedral glass in quarry lights. The principal entrance doorway is in the centre of the front. At the sides of the entrance doorway are double-lighted windows for the inner lobbies. There are main entrances at the front and side to the staircase wings of the gallery. The building will be constructed of white bricks and Bath stone dressings. The amount of the contract is 2,938*l*. The architects are Messrs. Hill & Swann, of Leeds and Sheffield; the builder and contractor, Mr. Thoday, of Cambridge; and the clerk of the works, Mr. W. Cooper.

SCHOOL-BUILDING NEWS.

Abingdon.—The new Grammar School here has been opened. The site is in the Albert Park. The new buildings have been erected by Mr. Charles Claridge, of Banbury, the contractor. On the ground floor, so called, which, however, in this case is elevated some 9 ft. above the ground, in order to give an airy basement-story underneath, there are a schoolroom (66 ft. by 20 ft.), having an open-timbered roof; boys' library, class-rooms, dining-hall, and assistant master's sitting-rooms. The first and second floors are devoted to dormitories for forty boys, bath-room, masters' bedrooms, matron's rooms, and other offices. Underneath the schoolroom is a covered playground for the use of the boys in wet weather, the side walls being arched, the floors laid with coloured tiles, and entered from the outside. The infirmaries or sick rooms are detached from the other portions of the building, being approached by a separate staircase, which can only be entered from one of the matron's rooms. The dining-hall is fitted up with dinner-lift oak tables and benches. The master's house, is of ample dimensions, some of the rooms being much beyond the usual size, the drawing-room having an oriel window on that side which overlooks the park. Externally the building is of a simple character, the local material of red brick and tile being the chief material employed, relieved by bands of Bath stone, the windows also being of that material. The grounds surrounding the building are being levelled and laid out as playground, recreation or pleasure grounds, and gardens for the head-master. Boundary-walls, gates, and fences are being erected in accordance with the design of the building by the trustees. The designs for the building were selected in competition, and were prepared by Mr. Edwin Dolby, of Abingdon, who has also superintended the works, assisted by his clerk of the works, Mr. R. F. Bryan. The total cost of the buildings, fittings, architect's commission, clerk of works' salary, and all other expenses, will be about 7,000*l*. The stone carving has all been executed by Mr. Samuel Grafton, of Oxford.

Devonport.—The new schools at St. Stephen's, Devonport, have been opened. The site has been given by Sir Edward St. Aubyn, the lord of the manor, and the architect was Mr. J. P. St. Aubyn, London. The builder was Mr. Elliott, of Plymouth. The schools will accommodate over five hundred children. The front does not come out level with the houses, but retreats several yards, and is enclosed with rails. The cost of the new schools is 1,400*l*.

Oldham.—St. Peter's Branch Schools, Ashton-road, have been opened as a place for the celebration of divine service on Sunday, and "as an easement to St. Peter's Church." The building is in the Gothic style, with open-timbered roof and two light windows with pointed heads. It has a spirelet, containing a bell, upon the apex of the gable. There is a porch to the principal entrance, and a small chancel, with vestry attached, having a cellar underneath, containing boiler for tea parties, &c. The building will seat about 280 persons. It is heated by hot air, and lighted by ornamental wall brackets. The total cost, including fittings and boundary wall, will be about 800*l*. Mr. John Wild, of Oldham, is the architect; and Mr. Wm. Lees, of Greenacres-hill, the contractor for the whole of the works.

Stamford.—Roman Catholic schools have been erected here. The new building is of stone, and in a style of architecture corresponding with that of the church, *i.e.*, Early Geometrical Pointed. It is 46 ft. long by 20 ft. wide, and 25 ft. high inside. The room is entered by a porch to the front, and opposite to that of the church, being lighted by a characteristic pointed

window in its gable. The floor is laid with tiles. The windows are coupled, pointed-headed, with an inner arch stopping in against splayed jambs; the lower portion of the woodwork being fixed, and that above the stone transome levels hinged to fall inwards. A traceried, cusped, pointed, and wheeled window fills the gables. The roof is composed of framed principals and curved pieces, carrying chamfered purlins, closer together than generally seen; and these in their turn carry the hoarding which is exposed. Messrs. Goldie & Child, of London, were the architects, under whose superintendence and from whose designs the work was carried out. Messrs. Halliday & Cave, of Greetham, were the contractors, whose foreman, Mr. Walters, had charge of the work.

Thorpe-le-Soken.—The memorial stone of a new parochial school has been laid here. The site of the proposed school, about three-quarters of an acre, is in the centre of the village, near to the church, and is the gift of the vicar. Mr. James Rolph, of Thorpe Park, has offered to be at the whole expense of erecting the schools, the estimated cost of which is between 700*l.* and 800*l.* The architect is Mr. White, of London, and the work has been undertaken by Messrs. Gifford & Wellham, of Thorpe, builders.

VILLA AND HOTEL BUILDING.

Carshalton.—The laying of a memorial stone in the walls of the first villa erected by Mr. E. H. Rabbits, on his Strawberry Farm Estate, has recently taken place. Strawberry Farm lies to the north of the new line of railway, the railway embankment bounding the estate on one side, from the bridge over North-street to a second bridge over the road and the river close to the residence of Mr. G. Brodrick, which forms part of the property. The other sides of the estate present frontages to three roads, one of which skirts Hackbridge Park. The whole is well timbered. The gravelly soil, the close proximity to the railway station, the rural and proverbially healthy nature of the locality, and the attraction of the Wandle, combine to recommend the spot as a site desirable for country villa residences. It is arranged to have but one road through the estate, which, with drains, are being formed and made. First-class houses are to be erected, with from a half to an acre of ground each. The ground is to be let or sold, and houses will be built to the design of those agreeing to take them after completion. The architect is Mr. J. D. Hayton.

Southampton. — An addition to the hotel accommodation at this busy port has been inaugurated by the opening of a building in the Italian style of architecture, which forms a façade to the terminus of the South-Western Railway, and immediately faces the docks from which the mail steamers start. This hotel has more than 100 bedrooms, with reception-rooms, bath-rooms, &c. It is started upon the somewhat indefinite but very requisite principle of a "fixed and moderate" tariff. A feature is a steam laundry of capacity sufficient to start any number of the longest *voyageurs* on their inland journey with clean wardrobes in a few hours.

STAINED GLASS.

Christ Church, North Shields.—The great west window of the tower in this church has just been filled with stained glass, to the memory of the late Rev. Christopher Reed, M.A., thirty-eight years vicar of Tynemouth. The window is circular, 10 ft. in diameter, and is fixed in iron-work with copper fittings. The subject is "Our Lord's Commission to the Apostles," which is surrounded by a border, the figures of our Lord, St. Peter, St. John, and St. James being prominent in the foreground, and life size. The work is painted with due regard to the great height in which it is placed. The cost has been raised by public subscriptions, amounting to above 110*l.*, from the parishioners of Tynemouth; and the work was designed and executed by Mr. Baguley, of Newcastle. The same artist has received a commission to paint two other windows for the same church, which will then be entirely filled with stained glass.

Chichester Cathedral.—Another memorial window, of stained glass, has been completed, and placed in the north aisle of this cathedral, immediately adjoining the north transept entrance. It was executed by Messrs. Clayton & Bell. The window is in memory of George Croke Rowden, D.C.L., Precentor of the Cathedral. The centre figure represents King David, the "sweet singer of Israel."

St. Saviour's, Lower Walmer, &c.—The east window of this church has been fitted up with stained glass, in memory of the late Mrs. Barrow. The window is in three lights, and the subjects illustrated are, in the centre, the Crucifixion, and on the sides the Bearing of the Cross and the Descent from the Cross. The tracery is filled with emblems of the Evangelists, surmounted by our Lord in majesty. Mr. W. M. Pepper, of London, fitted up the window. He is also at present engaged in restoring the stone-work and painted glass of the east window of St. Mary's, Seymour-street, and preparing nine large windows for the cathedral at Sierra Leone.

All Saints', Clifton.—A stained-glass window has been placed in the chancel of this church. It is of large size, and was designed by Powell, and executed by John Hardman, of Birmingham. It is composed of five lancet-headed compartments, and three circles above. The window represents a crowd of saints—some in heaven, and others on the earth. The cost of the window was 500*l.* A new organ has been provided for this church by Mr. Hill, of London, at a cost of 1,100*l.*

St. Catherine's, Gloucester.—At the time of the building of this church, says a Gloucester paper, five windows were placed in the chancel. They were the gift of a sister of Mr. Monk, and represented our Lord and the Evangelists. Soon afterwards a connected design for the whole of the windows was prepared by Messrs. Clayton & Bell, who suggested that in the north transept the figures should be those of Elijah, David, and Moses; in the south, those of SS. Peter, John Baptist, and Paul; in the windows on the northern side of the nave, Daniel, Ezekiel, Jeremiah, and Isaiah, prophets; in those of the south side, Stephen, Lawrence, George, Alban, Mary, and Catherine, saints of the early Christian Church; and in the window at the west end, the patriarchs Abraham, Isaac, Joseph, and Jacob. The windows in the south transept have just been erected by Messrs. Clayton & Bell; they are the gift of Mr. Charles Walker. The pierced tracery of the Catherine window has been filled with ornamental glass, the central light containing the sacred monogram. There are figures of SS. Peter, John, and Paul. In the trefoil over each is represented an angel bearing the martyr's crown and palm, and under the figures are representations of our Lord's charge to Peter, "Feed my sheep," the martyrdom of St. John in prison, and Paul struck with blindness when on his way to Damascus.

Church of Headless Cross, Redditch.—Two stained glass windows, by Mr. Preedy, of London, have been inserted in this church, to the memory of the late Baroness Windsor. In the first window there is a representation of the Holy Child, His Mother, St. Joseph, and the wondering shepherds, who have come to the stable to see Him; and underneath is the text, "The Word was made flesh, and dwelt among us." On the second light is represented the Virgin Mother holding the Child. Above their heads is the Star of Bethlehem, and kneeling in adoration are the Magi, offering their "sacred gifts of mystic meaning," while below is the text, "The kings of Tarshish and of the Isles shall bring presents." In the first light of the second window is the presentation of Christ in the Temple. On the next light is the baptism of our Lord in the Jordan; above is the holy dove, and below the text, "This is my beloved Son, in whom I am well pleased." Each of these subjects is surmounted by a canopy ornamented with golden crockets and finials, and surrounded by coloured borders. These windows are at the west end of the church.

Doncaster Church.—The Standish window, which is to be placed in the north transept of the parish church, will be from the *atelier* of Messrs. A. & W. H. O'Connor, London. The whole design will illustrate St. Matthew xvii. In the upper portion of the six lights the spiritual life will appear, depicted by the subject of the Transfiguration, shown in a mass of soft, transparent light. The figures will be of heroic size, and the whole subject will be surrounded by a great *aureola* of angelic spirits in mystic attendance. Beneath this, and also in the six lights, the subject represented will be that of the father with his lunatic and paralytic son, the disciples being grouped around—thus throwing into striking contrast, with the glory depicted above, the helplessness of humanity, struggling with pain and infirmity. The colouring of this part of the window will be toned down to a sombre light in order to contrast the more effectively with the radiance above. The *motif* is the same as Raffaelle's, but Messrs. O'Connor have designed original pictures, suited to the requirements of painted or stained glass. The cost of the window is to be 500*l.*

Wisbech Church. — A stained-glass memorial window to the late Mr. Wm. Stevens has just been placed in the north side of the chancel of this church. It is the workmanship of Messrs. Clayton & Bell, of London. The window is a two-light Gothic one, and the subject in one compartment is the "Agony in the Garden," and in the other "The Ascension." A quatrefoil above contains an angel holding a label inscribed "Watch and pray."

St. Paul and St. Peter's, Olney, Bucks.—A stained-glass memorial window is to be placed in the east end of this church. The window measures 37 ft. high, by 15 ft. wide, and contains, in the three centre compartments, the Ascension of our Lord into Glory, surrounded by the figures of the Apostles, designed life size; underneath the same, the subject of the Last Supper, forming a pedestal for the group above. In the two side openings are the subjects of the Annunciation of the Virgin Mary, the Nativity, Crucifixion, and Resurrection of Our Lord, surmounted by rich canopies in proper keeping with the figures. In the tracery are the emblems of St. Paul and St. Peter, the patron saints, also of the Four Evangelists, the Dove as an emblem of the Holy Ghost, Angels with various kinds of music, incense, &c., and others bearing scrolls. This window is now fixed. Messrs. Holland & Son, of Warwick, are the artists.

Books Received.

The Metropolitan Board of Works: Report on the Economy of Road-maintenance and Horse-draught through Steam Road-rolling, with special Reference to the Metropolis. By FREDERICK A. PAGET, C.E., &c. Printers, Judd & Glass, Doctors' Commons. 1870.

THIS Report is greatly in favour of the use of steam rollers of a certain weight. Their reputation of too great weight, Mr. Paget explains, was gained by 30-ton and 36-ton rollers. With the use of steam, he is of opinion, all objections to road-rolling fall away. There is no interruption to the traffic; the roller is easily managed, and ascends inclines; the road rapidly consolidates; no horses throw about loose metalling. The greater weight of the steam roller is its chief advantage over the horse roller. Too heavy rollers do injure the subways, &c.; but it is impossible to have a roller as heavy as the heaviest traffic. The frightening of horses can be prevented by working at night, or by blocking up the thoroughfare for a short distance while repairing the road; but an ingenious and simple way of preventing horses from being frightened by the steam-roller is to harness an old horse in front. The work of the steam-roller is much better than that of the horse-roller, in quality as well as quantity; and in economy the steam-roller is preferable. The saving in metalling can be estimated as at least 50 per cent. per annum, as is the general cost of maintenance by steam-rolling by comparison with horse-rolling.

In short, the steam-roller, in the reporter's opinion, saves expenses and time, and does better work than the horse-roller. The work diminishes the horse draught, and saves wear and tear in horse flesh, vehicles, and harness, as well as in the time and energy of men and animals.

The Report enters fully into the subject, and is very valuable.

VARIORUM.

"The Annual of Scientific Discovery; or, Year-Book of Facts in Science and Art for 1870. Edited by John Trowbridge, S.B., aided by S. Kneeland, M.D., and W. R. Nichols. Boston: Gould & Lincoln. London: Trübner & Co." This useful American Year-book of Science and Art sustains the favourable opinion of it which we have repeatedly expressed. The present volume gives a vivid portrait of Professor Peirce, and the usual notes of the editor on the progress of Science for the year 1869.—— "Russian Metallurgical Works, Iron, Copper, and Gold. By Herbert Barry, late Director of the Estates and Ironworks of Vuicksa. London: Effingham Wilson. 1870." In this small volume, a plain and brief account is given of

Russian metallurgical works, at the conclusion of which the author says,—

"I think the facts I have given will show that the territory which Russia possesses, susceptible of mineralogical enterprise, is enormous; that that country is as yet developed in an infinitesimal proportion only of its real power; and that it is only awaiting energy and enterprise to make its production astound the world."

——"Handbook of English Coins. By Llewellynn Jewitt. London: Tegg." A concise description is given in this little volume of the various denominations of English coin from the Norman Conquest to the present reign. It is illustrated by metal-coloured plates of a good many of the coins described.——Hogg's "Secret Code for Letters or Telegrams. Hogg & Co., Fleet-street." To prevent the easy decipherment of secret correspondence, based on the interchange of alphabetical letters, this card has been published, with instructions for the introduction of key-words, which will sadly puzzle the would-be decipherers, and render all their attempts, on the old principles, useless, unless they can guess the key word, which may be any single word whatever, so as it be known to the correspondents beforehand.

Miscellanea.

The Public Baths and Washhouses, King-street, Camden Town.—The annual report of the commissioners for these baths to the Vestry of St. Pancras has been printed. It states that the progress made the first year the institution was opened has been fully maintained during the past year. The total receipts for the year amounted to 2,552*l.* 11s. 9d., against 2,234*l.* 1s. 6d. for the forty-four weeks the baths were opened, 1868-9. From the opening of the establishment on the 19th May, 1868, to the 20th March, 1869, 145,735 bathers availed themselves of its advantages; and for the year ending the 19th March, 1870, 149,474 persons have enjoyed the luxury of a bath. The classification is as follows:—First class, 48,364; second class, 101,110. The number of washers in the wash-houses has gradually increased, and this portion of the establishment has been very beneficial to many poor families. In 1869 payment was made on 9,425 separate occasions, and the receipts were 218*l.* 14s. 5d.; but for the year ending the 19th of March, 1870, payment was made on 19,620 separate occasions, the receipts being 480*l.* 14s. 6d. The balance-sheet shows that 2 552*l.* 11s. 9d. have been received, and 2,110*l.* 11s. expended in working expenses and repairs.

The Building Trade in Paris.—The following petition has been laid before the Corps Législatif:—

"Gentlemen,—We, the undersigned, have the honour of calling your attention to the consequences of the suspension of public works in Paris. Numerous constructions, contracted for and commenced some years since, are exposed to a probable decay, which will lead to heavy expenses for repairs. The various bodies of craftsmen connected with our business, which in the capital and its suburbs employs more than 200,000 men, are very sorely tried. Certain heads of establishments who used to employ on an average a thousand men, can now scarcely find work for a hundred, and the nine-tenths who remain idle of course suffer and complain bitterly. Our stock and trade materials are deteriorating, and the standstill brought on by the public administration has necessarily led to a scarcity of private enterprise. As a crowning misfortune, we cannot obtain payment of the large sums due to us from the city. This state of things places us all, both masters and men, in a state of embarrassment which cannot be continued without serious danger. We therefore pray you, gentlemen, to take some immediate steps for saving us from the calamities which threaten us, since all henceforth depends on you."

New Store for Castleford Co-operative Society.—The corner-stone of a new store in connexion with this society has been laid at Castleford. The society was formed by about a dozen persons in 1865, when operations were commenced in a small shop. In addition to extensive shops to be used as drapery and grocery stores, there will be a secretary's office, a library, and a reading-room, and other apartments, the chief of which will be an assembly-room capable of containing 450 persons. The building has been designed by Messrs. Maxwell & Tuke, of Bury. The cost of the new store will be about 1,586*l.* The land involved an outlay of 365*l.* 15s. The contractors for the erection of the building are Messrs. Kassell, Brothers, masons and excavators, Castleford; Messrs. Shuttleworth, Brothers, joiners, Keighley; Mr. J. Binns, plasterer, Castleford; Mr. T. Laister, painter, Castleford; Mr. Doyle, plumber, Leeds; and Mr. Pycock, slater, Leeds.

Society for the Encouragement of the Fine Arts.—On the 2nd Dr. Westland Marston delivered a lecture to the members of this society on the "Tragic Element in the Drama and Fiction;" Dr. Doran in the chair. The lecturer, premising that his address would be confined to a few hints connected with the present condition of tragic art, declared that at no previous period in the history of literature was there so much distaste for tragedy. Pleasure and deep spiritual emotion at the present day were incompatible terms, the popular taste being in favour of perilous adventures and miraculous escapes. One cause of this was the passion for realism which seized upon the photographic appearances of life, and neglected the essential parts; another the monotony of modern society that made it bad taste to feel, and reduced everything to a dead level of indifference. It was the fashion now to be ashamed of showing spirit. In some degree all art takes notice of externals, but it should not be bounded by them. At its close a short discussion ensued, in which Dr. Doran attributed much of the falling off in the tragic art to the want of appreciation on the part of actors. Dr. Doran drew a comparison between the methods employed by celebrated English and foreign actors, in order to raise their feelings to the proper pitch of tragic excitement, insisting that our actors had managed this more naturally than the French.

The British Association Committee on Sewage.—There seems to be a hitch in the working of this committee. It consisted of six members, nominated by the association; but at the suggestion of Mr. W. Hope, three professors, Williamson, Marshall, and Corfield, were nominated, as a sort of colleagues, or extra committee men; and these three, with Mr. Hope, have outvoted the other gentlemen present *and voting*, on a question of payment of personal expenses. The only voters in the minority, Professor Wanklyn and Dr. Paul, have accordingly written to the corporations, &c., subscribing the fund, and they state that the replies are to the effect that the very fact of a subscription to the committee implies that the personal expenses of the committee, as well as other expenses, are to be met by means of it. Mr. Hope and his nominees are not likely, therefore, after all, to be able to shoulder out the original committee and have it all their own way as to the disposal of the fund and the resultant disposal of the question of sewage treatment and utilisation. The minority question the right of the three professors to vote at all on the committee nominated by the association.

Summer Garden Society.—The inauguration of the pleasure-grounds of this society, situated within about a quarter of a mile of the Willesden Junction Station on the North London Railway, was celebrated on Sunday. These gardens have been established by a body of working men under the title of the Summer Garden Society, and will be conducted on a principle popular on the Continent, under the management of Mr. Henry Bolleter. The admission is by season ticket only, at the price of 1s., and admitting until September next, the children of members under twelve years of age being admitted free with their parents, it being the object of the society that the gardens should become a summer resort for families. On week-days, among the other amusements provided are cricket, bowls, quoits, athletic sports, and dancing, on a large platform, with special amusements for children. On Sundays the gardens will be opened in the afternoon for promenade, with instrumental band, which will play from four until eight in the evening. No persons but those holding season tickets will be admitted into the grounds.

Clifton, Beds.—In an outlying portion of this parish, called Clifton Fields, an infant-school has been erected, at the sole expense of the rector; and the village church has been provided with additional bells, for chiming. The original peal consisted of five bells, the tenor, or largest bell, weighing about 11½ cwt.; to these ten have been added by the rector, chiefly with a view to the contemplated chimes. Messrs. Mears & Stainbank supplied the new bells. The chiming machine was manufactured and designed by Messrs. Gillett & Bland, at their steam clock factory, Croydon, Surrey. It is fixed in the same chamber (below the bells) as the clock with which it is connected by means of a lever, which sets the machinery in motion every three hours.

A New Motive Power in Aid of Steam. How to generate steam quickly, and at the same time inexpensively, has remained one of the problems left to engineers to solve. Mr. Galloway has invented an apparatus which, whilst it does not claim to supersede all steam boilers at present in use, yet claims that it can be affixed to them readily, and, once applied, save 50 per cent. in the cost of fuel, and pay for itself within one year. These are bold assertions, and well worthy of the consideration of those who use steam power. The invention, as we understand it, consists in the application of atmospheric air, which is first of all pumped down a pipe passing through the flue, the air being heated on its passage; the pipe is continued under the furnace, and passing through returns on the back under the fire bars; and the temperature of the air having thus become raised by the waste heat is driven into the boiler, and helps to generate steam in the chamber, the action of the piston rod assisting the process.

Royal Horticultural Society.—On Wednesday last the great show of the season at the gardens of the Royal Horticultural Society took place. The display of plants, flowers, and fruit was excellent, and may be regarded as in every respect successful. The attendance of visitors was very numerous. An important feature of the show was the exhibition of rhododendrons by Mr. Waterer, of Knaphill Nursery, under the marquee. Several thousands of trees were set in groups upon undulating land, and the masses of bloom of various tints, well arranged and divided by walks, to the spectator on an elevated spot, were very effective. In the general exhibition the orchids were a remarkable collection, and the fine foliage plants were numerous and of great merit. The azaleas were not quite so good as usual.

Oxford Architectural Society.—The members and their friends, to the number of twenty, have visited Rycote and Thame. The remains of the mansion at Rycote were first examined. They are but a small portion of the original mansion, which was almost a palace. Indeed, it was the residence for a time of two crowned heads. An account of the leading features of the church was read by Mr. Bruton. The members then continued their journey to Thame, when the chief points of interest in the church were described and pointed out by Mr. Payne, of Charsley's Hall. The Prebendal house was next visited; as also the grammar-school of Thame. The next excursion included Somerton, North Aston, Steeple Aston, Lower Heyford, Heyford Warren, and, if time permitted, Rousham. Warwick was next to be visited.

Broughton Footbridge, Manchester.—The ceremony of opening the new suspension footbridge which has been erected at the foot of Hough-lane, between Broughton and Peel Park, took place on Saturday afternoon. The centre opening is 135 ft. in length, but the entire length of the structure is 240 ft. The footway is 6 ft. wide, and the ironwork, of which there are some 20 tons, rests upon two stone piers, while the chains are attached to anchors of considerable weight on each bank of the river. The total cost of the bridge, which has been defrayed wholly out of the Broughton rates, is about 1,000*l.* The engineers are Messrs. Cawley & Newton, and the contractors for the ironwork, Messrs. W. Mabon & Co., Ardwick; and for the masonwork, Mr. E. Johnson, builder.

Hammersmith Bridge. — The annual general meeting of this company was held at the Freemasons' Tavern. The report stated that the tolls collected from the 25th of April, 1869, to 30th of April, 1870, amounted to 6,143*l.*, making the total receipts from all quarters, including a previous balance, 6,733*l.*, while the total expenditure had been 2,182*l.* A dividend of 2*l.* 2s. per share was recommended, which would absorb 3,313*l.* 16s.; and after increasing the reserve to 2,000*l.*, there remained a balance of 84*l.* in hand.

Royal Gallery of Illustration.—*Ages Ago* and *Beggar my Neighbour* are advertised for the last performance on June 18th. On the following Monday a novelty, from the pen of Mr. W. S. Gilbert, entitled *Our Island Home*, will be produced. For this Mr. German Reed has composed the music.

Cause and Effect.—A telegram from Madras says,—"Cholera is assuming an epidemic form. The effluvium from the river is frightful."

Northern Architectural Students' Society.—On the 31st ult., the winter session of this society was brought to a close. The members met in the anteroom of the Literary and Philosophical Society, and the report of the committee and the treasurers' statement were submitted and approved. The president (Mr. W. L. Newcombe) then delivered an address appropriate to the occasion, after which the election of officers for the ensuing year, took place with the following result:—President, Mr. W. L. Newcombe; vice-president, Mr. J. Morton; honorary secretary and treasurer, Mr. J. Oswald; committee, Messrs. Bedlington, Oliver, Spence, and Thornhill. During the summer the society will hold meetings occasionally at some of the most interesting buildings in the district.

Discoveries.—At Wigmore Castle, Herefordshire, the other day, some workmen, digging, found a dungeon communicating with another, of equal size, each about 15 ft. square, and covered with arched stone roofs. They were approached by means of stone staircases, which have been buried in the rubbish of the ruins for many years. In the stonework of the side-walls were embedded large, strong iron staples, supposed to have been used for securing prisoners during the civil wars.——A Gallo-Roman cemetery has just been discovered at Gièvres (Loir-et-Cher). A considerable number of urns and funereal vases of very curious workmanship have been found.

Christ Church Cathedral, Oxford.—The restoration of Christ Church Cathedral has been decided on, and will be commenced in the ensuing vacation. Much labour and cost will be involved in the restoration of the nave,—principally the windows. These windows were first of all Norman, and that next, for the most part, was altered to the Perpendicular, and finally, all the traceries were taken out to make room for the stained glass now to be observed therein. Such of the windows as were thus altered will be restored to the Perpendicular. The two in the south side will not be included in the list. These will remain Norman, in conformity with the chancel window, as it is to be.

Islington Workhouse.—A curious scene occurred at the meeting of the Islington guardians on the 3rd, the builder, Mr. Nutt, imploring the architect, Mr. Burden, to go round the building with him and point out what was not to his satisfaction; and the architect resolutely refusing to do anything of the sort until Mr. Nutt had written him a letter saying that the works had been carried out in accordance with the specification. The Guardians begged and prayed, but all in vain. Ultimately, however, the architect agreed to go over the works with a sub-committee of the Board, the builder and clerk of the works being present.

The New Market, Madeley.—Arrangements having been made with the lord of the manor for holding a market here, and for the erection of a suitable building, a contract has been entered into with Messrs. Nevitt Brothers, of Ironbridge, for its erection, and the work is now being proceeded with. The building will be 50 ft. by 70 ft. in the interior, and will consist of red and white brick, with iron roof. The front will have a parapet, also two entrances, and the interior will be well supplied with stalls, classified to suit dealers in various kinds of goods.

Enormous Conflagration at Constantinople.—A fearful fire has occurred in Pera. In consequence of a strong wind the flames spread with alarming rapidity, and the English Embassy, the American and Portuguese Consulates, the Naoun Theatre, the Palace of the Armenian Patriarch, many churches, mosques, and several thousand houses and shops in the finest part of Pera, were completely destroyed. Several persons were killed and others wounded. The loss is immense. Thousands of families are rendered homeless.

Theatrical Scaffolding.—A sad accident has occurred in the Alhambra Music-hall, Leicester-square, through carelessness in the fixture of a scaffolding on which fourteen or fifteen young girls were placed. No less than eleven of them were injured, some of them very seriously, the arm of one being broken, the ankle of another dislocated, a rib of a third broken, and others bruised. Nothing, probably, but fear of the manager's personal inspection of such scaffoldings can prevent such carelessness and such "accidents." Official inspection is, we suppose, out of the question.

Value of Land in Walworth.—At a sale of fifty-one building plots, fronting or abutting upon a new street, lately let by auction, large prices were obtained. The lots cover about an acre and a quarter of land, and the ground-rents reached a total of 494*l.* 10*s.* per annum. This is at the rate of 395*l.* 12*s.* per acre, which, capitalized at twenty-five years' purchase, gives 9,890*l.* per acre as the value of the fee simple.

The Thames Embankment.—The Board of Works has decided that the name Victoria Embankment shall be applied to the Northern Thames Embankment, and Albert Embankment to that on the south side of the river.

TENDERS.

For enlargement of house for Mr. J. H. Clarke, at Castle-hill, Maidenhead. Mr. J. H. Rushforth, architect:—

Rogers	£2,589 0 0
Dove	2,495 0 0
Simpson	2,485 0 0
Silver & Son (accepted)	2,450 0 0

For house and shop, High-street, Kensington, for Mr. Joseph Toms. Mr. John Cox, architect. Quantities supplied by Mr. Sidney Young:—

Hockly	£4,840 0 0
Roberts	4,760 0 0
Conder	4,517 0 0
Manley & Rogers	4,396 0 0
Scrivener & White	4,268 0 0
Cooke & Green	4,267 0 0
Longmire & Burge	4,255 0 0
Goodman	4,195 0 0

For a detached villa at Croydon, for Mr. Heslop. Messrs. Hine & Sons, architects:—

	1st.	2nd.
Pollard	£1,840	£1,902
Shilleto	1,525	1,589
Roberts	1,400	1,485
Glaskin	1,398	1,493
Nightingale	1,350	1,440
Jarrett	1,339	1,399
Sharpington & Cole	1,313	1,384
Hallidge	1,310	1,389
Woodward	1,280	1,355
Peskett & Taylor	1,274	1,354
Bowler & Co.	1,248	1,177
J. & A. Wright	1,247	1,317
Laurie	1,246	1,316
Wood & Co.	1,229	1,290
Willoughby & Mead	1,152	1,213
Thomas	1,142	1,208
Hutchinson (accepted)	1,100	1,160
Mason & Brisbey	1,079	1,140

For St. Paul's Vicarage House, Peterborough. Mr. E. Browning, architect:—

	House.	Stable, &c.
Perkins & Sons	£1,407 0 0	£110 0 0
Richardson & Roberts	1,343 0 0	104 0 0
Halliday & Cave	1,320 0 0	103 0 0
Hobson & Taylor	1,297 0 0	100 0 0
Thompson (accepted)	1,287 10 0	106 0 0

For new schools for district of St. Mary, Kilburn. Mr. William Smith, architect:—

Brown	£1,494 0 0
Foxley	1,366 0 0
Yerbury	1,307 0 0
Patman & Fotheringham	1,298 0 0
Keyes & Head	1,282 0 0
Sawyer	1,244 0 0
Newman & Mann	1,216 0 0
Manley & Rogers (accepted)	1,157 0 0

For repairing twenty-four houses at Upper Sydenham, for British Empire Life Assurance Company. Mr. McDougald, architect:—

Williams & Son	£777 0 0
Pierpoint	738 0 0
Sayer	726 0 0
Davies	578 0 0
Stoner	557 0 0
Roy	535 0 0

For repairs to four houses, Acacia-road, Sydenham, for the above Company:—

Sayer	£490 0 0
Pierpoint	389 0 0
Williams & Son	325 0 0
Roy	275 0 0
Stoner	243 0 0

For repairing thirty houses, Chaplin-street, Forest-hill, for the same Company:—

Williams & Son	£993 0 0
Roy	897 0 0
Pierpoint	793 0 0
Stoner	787 0 0
Davies	755 0 0
Sayer	675 0 0

For enlargement of Countess of Huntingdon's College, Cheshunt. First portion. Messrs. Lander & Bedells, architects. Quantities supplied:—

Patman & Co.	£5,079 0 0
Williams & Sons	5,050 0 0
Manley & Rogers	4,960 0 0
Sewell & Son	4,953 0 0
Mann	4,895 0 0
Brass	4,882 0 0
Browne & Robinson	4,862 0 0
Axford	4,775 0 0
Grover	4,748 0 0
Henshaw	4,745 0 0
Egan	4,709 0 0
Dove, Brothers (accepted)	4,475 0 0

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